

Video, mobile data and mobile bill shock

by Ed Ogonek, President and CEO, Bridgewater Systems

Data usage is growing explosively and, unless they can intelligently manage the traffic, operators are hard-pressed to meet peak demands without compromising quality, losing money or both. Given the mobile sector demand for content, social networking and entertainment it is clear that an intelligent, adaptive and flexible approach to the balancing of limited network resources is required.

A smart policy control strategy adds richness and flexibility to service and billing relationships, and lets customers control the relationship and their mobile data wallet.



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The evolution of the mobile Internet has accelerated over the past 24 months, and with it has come a fundamental change in the economics of delivering data. Flat-rate service plans, affordable smartphones, tablets and multimedia-intensive devices, social networking, as well as increasing use of USB laptop data sticks or 'dongles', have all led to a rapid increase in the amount of data traversing the mobile network.

The implications of this data growth are dramatic for operators and subscribers alike. For operators, increases in the cost of delivering data are threatening to outstrip the growth in their data revenues. On the flip side, the risk to user experience from congested networks is significant and very

real - dropped data sessions, sluggish network speeds, and pent-up frustration. Customer loyalty has never been more of an imperative for operators than it is today.

The mobile data traffic monster

Today, video dominates mobile data traffic, accounting for at least 40 per cent in mature markets, and it will continue to do so over the next three years. According to Cisco Systems, video is expected to grow at a CAGR of 131 per cent and will constitute 66 per cent of all mobile data volume by 2014. By then, the total volume of mobile data traffic will reach 3.6 exabytes per month, growing 108 per cent per year.

Driving 4G adoption

Despite its colossal appetite for bandwidth, video is a primary driver for 4G adoption (either 4G LTE or WiMAX). Many operators are banking on high-definition mobile video to induce critical mass adoption among subscribers and take their networks to the next level.

Consider the device innovation so far in 2011, with many new tablet devices introduced on operating systems such as Android Honeycomb, which are poised to compete with the Apple iPad. These all come with built-in features designed to support multimedia and video, such as HD video capture, video chat and conferencing. Verizon

Wireless also unveiled a host of devices built for its 4G LTE network - from smartphones, to tablets, to laptop computers and mobile hotspots, all boasting video capabilities.

Analysts expect that by 2014, around 47 per cent of Asia's mobile devices will be Internet capable. This Internet capability will further drive mobile data services. With revenues from voice services remaining largely static, mobile data will be centre stage in any operator's plans for growth and innovation.

Video also plays a crucial role in the public safety arena. Safety agencies worldwide are enhancing their machine-to-machine (M2M) communications with advanced mobile broadband and multimedia capabilities to ensure high reliability and priority access to network resources, devices and mission-critical applications during emergencies. IP-based cameras are replacing traditional analogue CCTV surveillance systems with policy-based access to live and archived videos as well as security information over the public safety network.

A high-speed TD-LTE network was used at the World Expo 2010 in Shanghai last year for security video surveillance and monitoring between the command centre and the pavilions.

Profiting from mobile data

Increasingly, subscribers will prefer to use operators that offer a transparent network experience, with a high degree of personalization and service innovation.

Today, the mobile sector faces explosive demand for content, social networking and entertainment services and it is clear that an intelligent, adaptive and flexible approach to the issue of balancing customers and limited network resources is required. Without the ability to manage access to services, content and applications based on subscriber entitlements and network conditions, subscribers face the risk of experiencing the mobile data equivalent of electricity 'brownouts', or the unpleasant experience of suddenly receiving unexpectedly huge bills for content downloads.

The growing demand for network and air-path capacity, driven by consumer and enterprise users taking advantage of the new generations of data-centric devices and services now available, is at the heart of the problem.

Operators can respond to this appetite for mobile data by increasing network capacity, but this takes time and money - the latter currently being in short supply - and runs up against limited wireless spectrum capacity.

Although some Asian operator alliances have introduced flat-rate data roaming plans, if they impose blanket bandwidth and download limits, or just offer 'best-effort' connectivity, they run the risk of alienating their most profitable and high-spending customers with the brownout scenarios highlighted above.

Alternatively, if they try to throttle back traffic through high tariffs and roaming charges, they will alienate customers even more, as customers experience 'bill shock' and roaming fees totalling tens of thousands of dollars.

Smart policy control

The crucial balancing point for matching services, network availability and customer demand lies in the policies applied to each customer.

In the past, policy control tools were far too heavy-handed for operators to really turn them to their advantage, while preserving the customer experience. 'Best effort' or throttled-back service across the board, is no longer sufficient, especially for critical enterprise applications or high-value content. Alternatively, the use of blunt generic pricing policies or caps on service access can have a similarly brutal effect on the customer's trust and their future spending patterns.

What is needed is a smart policy approach to handle this increasingly complex and sensitive relationship with the required levels of personalization.

There are essentially three components to applying such a strategy:

Firstly, customers need access to self-service portals or automated alerts that allow them to send top-up or bandwidth boost requests, change their service packages, get information on their usage and calling patterns, and set individual limits on roaming or downloads. Take this even further, with client applications that present a real-time view of current usage versus plan, and the ability to set personal usage limits, all available on their device. This enables a high degree of personalization, improved transparency that reduces customer support overheads and bill shock, while encouraging take-up of additional services.

Secondly, the use of policy control should enhance the customer experience. Both the customer and the operator can start to tailor policies to support specific applications such as video and music downloads, Web browsing and email, while taking into account the customer's own real-time behaviours and preferences as well as current network conditions. With many video optimization solutions available to help manage video traffic, policy can be applied to decide when to optimize video traffic based on subscriber entitlements or to satisfy video quality service level agreements, for example, for mission-critical medical imaging applications.

Finally, a more flexible, real-time and customer-friendly approach to the issue of setting bandwidth caps should be adopted so as to allow operators to act appropriately depending on whether they are facing heavy or abusive users, or customers who inadvertently exceed a set limit by downloading a movie. By optimizing and rationalizing the allocation of bandwidth across customers, and prioritizing those prepared and able to pay for it, the customer gets a consistent, fair experience while the operator avoids the need for expensive network upgrades to relieve network congestion.

In practice, a smart policy control strategy adds unprecedented richness and flexibility to each mobile operator's palette of service and billing relationships, and keeps the customer feeling that they are in control of that relationship and their mobile data wallet.

For example, by monitoring a post-paid customer's behaviour over long periods in real time, an operator can offer personalized bandwidth limits or alternative tariffs along with appropriate notifications to ensure fair usage, or alerts to new service plans. Alternatively, pre-paid customers can be monitored and offered relevant opportunities to upgrade their contracts through a portal as their circumstances change, or to offer other pre-purchase options.

The complexity of the relationships between individuals, enterprises and the ever-lengthening content and applications value chain will only increase. The appetite for mobile data, in particular video, is set to thrive. Policy control provides a core set of intelligent capabilities that allow operators to optimize the use of network resources, and innovate with personalized services that drive customer loyalty and new revenue streams ●