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## New Approach to Mobile Traffic Management Needed

The variety of smart mobile devices and the apps that run on them, made mobile broadband more successful than anyone imagined. Now more than ever, mobile operators must manage traffic so that networks can handle the load. Given today's competitive environment and investor expectations, the mobile operator must evolve its strategy to deliver innovative and targeted services while maximizing value. Mobile broadband is changing quickly and strategies of just a few years ago can lead an operator to ruin as they face challenges from every direction: ruinous and aggressive price competition; encrypted traffic, which renders legacy video optimization nearly useless; and innovative upstarts seeking to cherry-pick the operators' subscribers, just to name a few.

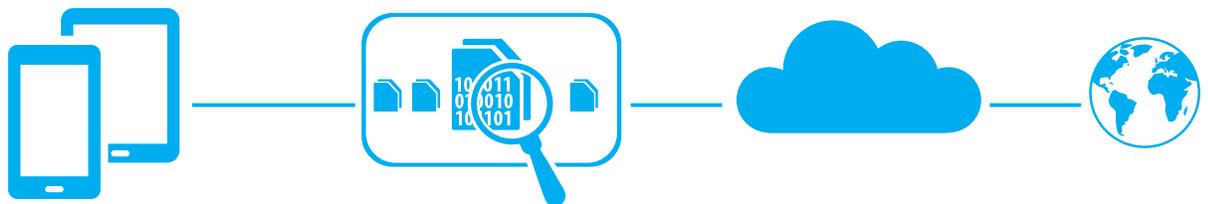
Accompanying this challenging business environment is the shift (or leap) in network technology to virtualization, rendering the defensible strategies of the past vulnerable. Sophisticated and expensive platforms with bespoke hardware solutions will fade away as operators demand best-in-class solutions from leading Virtual Network Function (VNF) vendors. Virtualization changes both the nature of the network functions and the means to deploy them, with far-reaching implications. This paper summarizes the issues faced and the solution offered by at least one vendor.

## NEXT-GENERATION NETWORK ISSUES

There are a number of key areas that highlight the issues of next-generation networks.

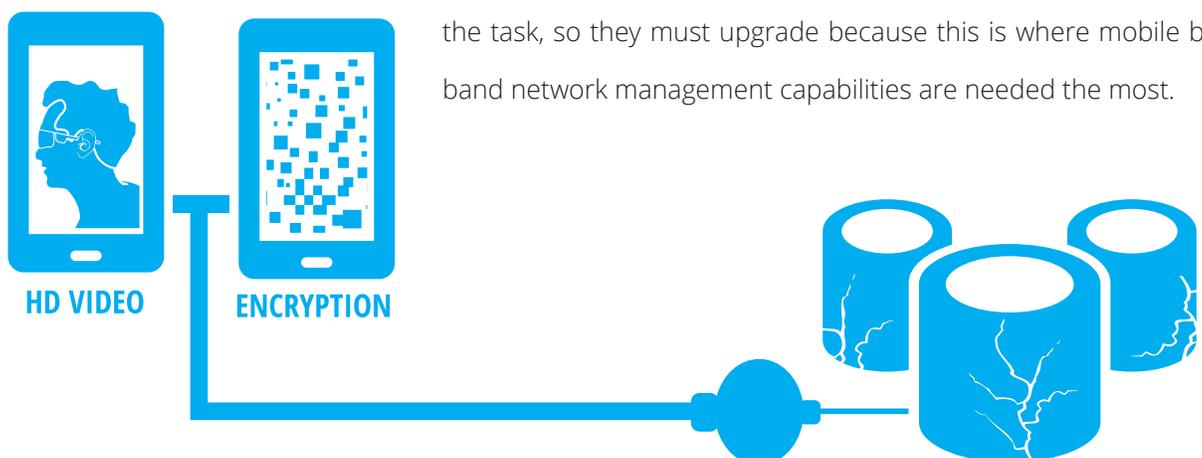
### DEEP PACKET INSPECTION

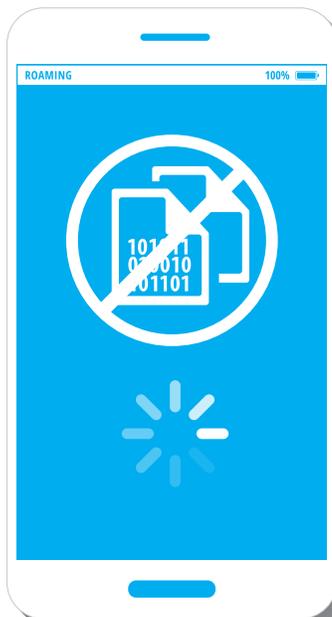
DPI is used for network protection and traffic analytics. This physical “bump in the wire” is expensive to expand with traffic growing at two to three times per year. The solution needs to do more than just DPI.



### VIDEO AND ENCRYPTION

The most impactful data flow in mobile is streaming; it places the biggest demand on networks and is ever more popular. The adoption of HD, UltraHD, and secure encrypted streams only compounds the problem. The network management capabilities of today are not up to the task, so they must upgrade because this is where mobile broadband network management capabilities are needed the most.





## INFLEXIBLE DATA SERVICES

Subscribers want data plans that meet their needs; for example, they don't want to disable data when roaming, but they have to because of the operator's inflexible billing and management. Operators are leaving money on the table by not thinking more about how and where data is consumed.

Currently, major North American operators put forward programs that offer free, or zero-rated, video for subscribers in return for concessions to lighten the network load from video. The successes of these programs are *prima facie* evidence that subscribers do not consider all bytes as equal in value, and if given the choice of free, many will find the trades acceptable. A more profitable price plan would address the subscribers' nuances and willingness to pay.

## INNOVATION OF PROTOCOLS

The basic traffic language of the Internet today is TCP/IP, but with ever-greater expectations for network performance and increasing demand for real-time services, new innovation with lightweight UDP protocols gains usage. Because the fabric of the network changes, the tools to manage mobile broadband must be flexible and adaptable.

## VIRTUALIZATION

Virtualization is a widely deployed state-of-the-art technology in the IT industry, and mobile operators are now coming to terms with their own needs in the telecom cloud. Using commercial IT hardware, operators and their vendors build the core network with VNFs, hypervisors, and orchestration managers on x86 architecture platforms. This leads to business process transformation, which is more than simply virtualizing network functions, namely:

- Defining and isolating key functions for each service path
- Removing clutter and redundant functions
- Practical deployment to manage the VNF combinations

## WHAT SHOULD AN OPERATOR DO NOW?

This rapid and challenging volatility in both the technology and the business environment, causes many operators to struggle. What can an operator do, and how can it optimize revenues while simultaneously meeting the quality demands of its diverse subscriber base? Operators should consider upgrading to a state-of-the-art traffic-management solution that can address all these issues. One such solution is the IP Traffic Manager from Openwave Mobility.

## OPENWAVE MOBILITY: REBOOTING DPI

Openwave Mobility's IP Traffic Manager brings many innovations to the operator seeking to meet looming traffic demand, address the changing protocol landscape, and maximize the monetization opportunity. The IP Traffic Manager reboots the classic DPI function into the virtualized age with a core VNF implementation that strips the eye candy and delivers streamlined packet and flow classification. Through its packet classification capability, IP Traffic Manager enables service orchestration and service chaining in virtualized networks to be performed at a single point, for both encrypted and unencrypted traffic, providing quality of service, optimization, and monetization capabilities — all on COTS hardware.

Rather than virtualize a bespoke platform, the Openwave Mobility approach results in high performance and light touch for the operator's network. With classification in a virtualized environment, the IP Traffic Manager increases operational efficiency by performing the DPI, and then sharing the classification with other VNFs.

Openwave Mobility does not stop at just virtualizing DPI, but they strengthen the classification engine with several new capabilities. They anticipate the needs of tomorrow's operators by specifically addressing the challenges of encrypted and real-time protocols, which are important not only for OTT video and security issues, but also for IoT needs, as low power sensor networks increasingly deploy lightweight and low impact protocols like User Datagram Protocols (UDP).

The IP Traffic Manager benefits compound, as it takes the packet and flow classifications into a continuous, real-time stream environment, by which an operator can match the growing diversity of usage, and dynamically monetize and assure quality of service (QoS) for today's mobile broadband. Static classifiers fall short when attempting to manage traffic that can include video, text messaging, web browsing, and VoLTE calls, all interspersed together. Static classifiers leave operators poorly

equipped to optimize the revenue streams and manage the traffic flow QoS, leaving money on the table and possibly delivering a frustrating user experience.

## MONETIZATION

The IP Traffic Manager gets even better, as it is intimately compatible with Openwave Mobility's Integra™ platform for delivering virtualized value added services. Among other things, the platform provides media optimization for both encrypted and unencrypted video and audio streaming.

Packet classification performed in continuous, real time gives the operator much more flexibility to further optimize performance and monetize usage. Compound this with the Secure Traffic Manager (encrypted video management), DynaMO (media and web optimization), and DynaBoost (TCP Optimization), and operators greatly expand their toolkit to manage previously unmanageable UDP and other protocols. IP Traffic Manger is part of a complete end-to-end optimization and monetization solution.

Openwave Mobility's traffic analytics, pricing, and promotion solutions also benefit from real-time, continuous flow and packet classification. Legacy policy, charging, and control solutions cannot address these classification needs in real time, so operators are left with sub-optimum solutions. A mobile operator attempting to establish a competitive position, perhaps by implementing a zero-rated video plan, fails to achieve revenue optimization by applying the policies across the board based on a static session classification.

## CONCLUSION

Openwave Mobility brings much-needed new capability to the mobile broadband ecosystem with its IP Traffic Manager with real-time and continuous classification, and leveraging IT infrastructure that evolves with Moore's Law. It further compounds this capability through its Integra virtualized service delivery platform for end-to-end management and monetization solutions to differentiate the successful smart network operator from its bit-pipe competitors. Operators seeking to improve their business competitiveness and financial performance should consider the Openwave Mobility IP Traffic Manager as they migrate and scale into the networks of tomorrow, where the mobile broadband network is a distributed computing environment with radios attached – in effect, a license to print money.

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