

## **Reader Forum: 4G to the rescue**

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### **Will 4G truly solve mobile broadband problems?**

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The explosive growth of Web usage on mobile devices is one of the defining industry trends of the past 12 months. Web 2.0 migration to the mobile platform, rapid uptake of smartphones and proliferation of mobile Internet service offerings, have largely driven the increase.

Mobile social networking and micro-blogging are regularly cited as key drivers of the Web on mobile, with an estimated one-third of 16-35 year olds accessing Facebook and Twitter regularly via their phones (CSS Insight, *Report on Mobile Internet Usage 2009*). While Facebook and similar services will continue to drive growth, Cisco claims that mobile video will exhibit the highest growth rate of any application category accounting for over 64% of the world's mobile traffic by 2013. Statistics like these suggest that the growing problem of network congestion already being experienced by operators will not abate, as bandwidth-intensive services become increasingly popular and intrinsic to the mobile Web experience.

### **4G: Revolution or temporary reprieve?**

The roll-out of 4G and the prospect of an infrastructure more capable of processing the increasingly sophisticated fabric of the Internet holds promise for operators but will not be a panacea.

The experience of 3G should be a lesson that data consumption will grow to fill the capacity of the pipe. Second-generation networks struggled to cope with consumer demand for basic search and e-mail. When 3G arrived, demand for such services was replaced by a desire to access even richer ones, such as social networking and content-sharing Web sites. Similarly, rising consumer expectations for rich services and the expanding user base suggests that 4G will alleviate the pressure of network congestion for a period of time, rather than serve as a definitive solution to the problem.

The rise of application store offerings from both handset manufacturers and operators poses another challenge to network capacity. Apple recently announced that more than 2 billion

applications have been downloaded from its store over the course of eighteen months – almost 20 per user per quarter. This begs the question of how the infrastructure will be able to cope as application stores flood the market and it underscores how the technology of the Internet will always outpace that of mobile networks and devices.

## **The future of the mobile Internet proxy**

Since the first browsers were installed on mobile phones, proxy servers have served to optimize and enhance the mobile Web experience. Initially WAP gateways, they evolved to transformation and network acceleration servers, most recently migrating to distributed browsing solutions like Novarra's Vision Platform. The distributed architecture delivers a desktop-equivalent experience with mobile context, increasing the speed of page loads and reducing over-the-air payload. While 4G will relieve some of the pressure, there are three primary reasons the mobile Internet proxy will become increasingly important:

**The Web continues to grow in complexity:** The need for in-network intelligence to bridge the gap between handset capabilities and Web content technologies is ever more important. Next-generation approaches require an intelligent, broader array of processing that creates additional functionality and understand the way a user wants to interact with the Web via mobile. Ajax, Silverlight, Flash and others as yet undeveloped technologies will enhance the user experience and create challenges for processing and delivery to mobile. And because operators are offering inexpensive unlimited data plans to stay competitive, there will always be a need to improve network efficiencies.

**Cloud-based computing will be the norm:** The need for in-network proxy technology will be crucial for the successful provision of new services and cloud-based “mobility.” Consumers will expect services to follow them whereby they can seamlessly transition to and from the PC, TV and mobile with “always on” connectivity and real-time presence, status and alerts. A device centric-architecture will not suffice. Networks are the logical place to manage this integration of location data, profile and mobile-context information and services. Over time, applications will migrate to the Web and the browser will be the central access point for consumers' favourite services.

**Mobile devices capabilities will lag the PC:** Even today's best smartphones are unable to deliver all the richness of the Web or multimedia and commonly take close to a minute to load pages designed for a PC. Moreover, two-thirds of all mobile devices today are being sold in emerging markets where economic conditions require a very different class of device. While these devices will eventually take advantage of the wider 4G pipe, they will still require the

assistance of a server or proxy browser to be able to access the Internet and handle the demands of rich content and services. Regardless of the cost and capability of these devices, consumers will expect access to the same level of services as those available on high-end devices.

Fourth-generation networks will accelerate the migration of the full, rich Internet to the mobile environment. The distributed mobile Internet architecture that offers in-network intelligence and device-side micro-clients will enable service providers, Internet brands, and handset OEMs to deliver compelling mobile Internet services while leveraging the new infrastructure with maximum efficiency.