

# leading edge

## 4G networks demand multidimensional performance

Smartphones, mobile Internet and machine-to-machine (M2M) communications will challenge mobile networks. Yet the transition to a 4G architecture provides a golden opportunity to address the challenges and transform both networks and business models.

**Two approaches to 4G networks are emerging.** One adds mobility to Internet platforms; the other adds Internet to mobile platforms. The implications of this choice are only now becoming clear. When A is mobility and B is Internet, A + B does not equal B + A.

Imagine 45 billion mobile **devices**. We'll probably get there around 2020, given M2M. So 4G networks will require unprecedented scalability for endpoint-awareness and data throughput.

Mobile networks will need to manage dynamic, stateful **sessions** on all those devices. That takes Layer 4 awareness and a dynamic session-based control plane with low latency.

Networks also need to **adapt** to dynamic radio networks and provide clear visibility to changing network conditions. Networks will require applications-awareness to ensure **high performance** and enhance the **user experience**.

**The key opportunity in 4G is to transform the business model.** A smart mobile Internet gives telecom operators the opportunity to go beyond a simple bit-pipe network to a new two-sided revenue model. Smart mobile networks make it possible to capture revenue streams not only from subscribers, but also from content providers, applications providers and advertisers.

We believe that the smart mobile internet will demand a purpose-built, next-generation platform. My colleague Rehan Jalil describes smart mobile networks in a Q&A on page 6.

**Many operators will take a convergence path.** Optical transport networks (OTNs) can converge today's packet and optical networks. Industry analyst Ron Kline examines the OTN trend on the back cover.



*"A smart mobile Internet gives telecom operators a new two-sided revenue model."*

— Dr. Vikram Saksena, Chief Technology Officer

Multiple system operators (MSOs) are extending beyond cable TV and high-speed Internet into adjacent markets such as business services and mobile backhaul (see page 14-15).

For customers who prefer to work through system integrators, Tellabs partners with integrators such as Nokia Siemens Networks (pages 10-11).

Now is the time to tackle the smart mobile Internet. And we're ready to help you succeed.

Sincerely,

Dr. Vikram Saksena  
Chief Technology Officer