



Work Smarter, Not Just Harder

“Smarter mobile networks empower operators to offer sustainably profitable mobile Internet services and stay relevant in the value chain.”

— Rehan Jalil, Senior VP of Tellabs' IP and mobile Internet group

Highly intelligent networks enable mobile operators to avoid becoming dumb pipes

By Lynnette Luna

Tellabs' late 2009 acquisition of WiChorus created some unique opportunities for mobile operators. WiChorus' highly flexible, open architecture SmartCore™ platform, combined with Tellabs' IP/Ethernet technologies, brings routing intelligence to the packet core — then extends it all the way out to the transport layer.

Mobile operators can now create new, “smart” services that take advantage of their network attributes. The possibilities range from bandwidth and QoS granularity to personalized services based on user preferences, location and historical information. As a result, operators can avoid one of the biggest threats to their bottom line – becoming dumb

pipes – and instead position themselves in value-added roles for customers and business partners.

Just as important, operators can execute that strategy immediately with 3G, instead of waiting until they deploy 4G. *Insight* contributing writer Lynnette Luna recently spoke with Rehan Jalil, senior vice president of Tellabs' IP and mobile Internet group, about the business case for smarter networks.

Lynnette Luna: *Demand for mobile broadband services is skyrocketing. Certainly an all-IP network architecture geared toward data makes sense. But is that architecture a good fit only for WiMAX and LTE?*

Rehan Jalil: The flatter, all-IP network architecture is also a good fit for 3G network evolution. The key difference between LTE, WiMAX and 3GPP-based technologies is the front end, whereas the back end is functionally similar. While operators look to extend the capacity of their 3G networks to cope with the demands of smart phones and devices, they can also add 4G platform attributes to their packet core networks. On one hand, it provides them with the needed capacity. On the other hand, it prepares them to evolve to 4G architectures.

Operators today can look at ways to build smarter 3G networks. Since capacity can't meet demand, they have to deploy technologies that dynamically optimize their 3G networks. They need to bring in new ways to create value, make money and justify capital spending.

“We are giving operators the ability to mix and match any base station with the packet core.”

One of the key things they can do is build on the back end much more intelligence in their existing 3G networks to increase their yield per megahertz. That way, operators will have a smooth transition to 4G.

If operators are thinking about new business models, and if they do the right homework, they can reuse the packet core and leverage its advantages in 4G. All of this can be done before changing radios and devices.

LL: *Can you talk about what it means to have a smart network?*

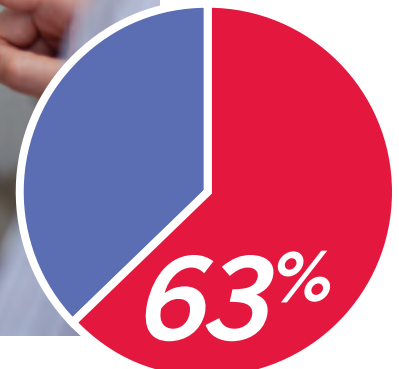
RJ: A smart network means a network that offers operators deep insights about what is happening in the network, enables granular knobs to fine-tune various parameters automatically and provides ways to monetize content-oriented transactions. It can be characterized as one that is content-aware while at the same time giving operators insight into where network problems are.

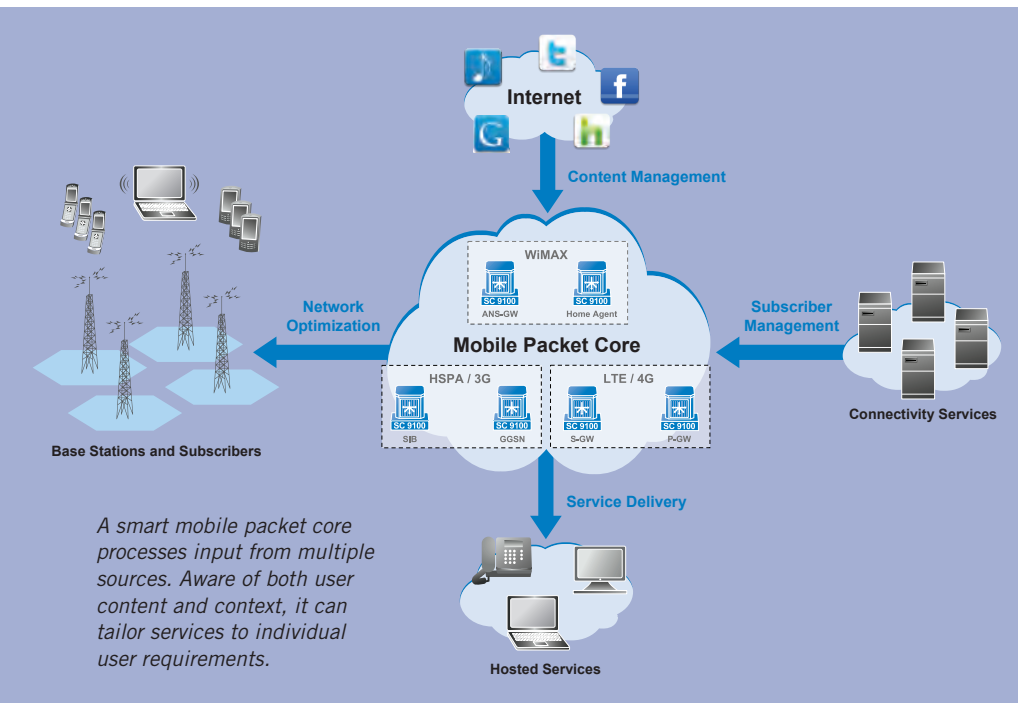
Mobile networks are very, very dynamic. The congestion on one base station may last a few minutes and then move to another base station. Adding intelligence to the network means operators can understand where a congestion problem is and have the network automatically optimize traffic around it.

The key is merging this capability with content-awareness so that operators can monetize services in a different way. [Then] operators can move away from offering plain bandwidth



Tellabs' survey of 15,000 mobile users in 15 countries shows that 63% want smart, personalized mobile Internet services now.





for a fixed price per month.

A simple example is a network automatically figuring out the reason a user is connecting to the network. Some users may not have any relationship with the operator but only desire to download an e-book or video.

The network should understand this, know how much the content costs and configure how much the operator should be paid. That means consumers can pay for a subscription or pay for a very specific transaction via the content provider.

This also brings out a huge opportunity in advertising. The fact that operators control and provide services to hundreds of millions of individual devices is a powerful thing. Operators can now understand users' behavior, what they are trying to access and the intent of access to the mobile Internet at that time. With the permission of that subscriber, this knowledge can be a powerful tool for the operator, while providing beneficial services to the end-user.

LL: Some pundits argue that 4G won't be the panacea for easing capacity constraints. Instead, they argue that once consumers have access to higher bandwidth services, they will continue to consume more. What are some of the technical aspects operators should consider in dealing with this influx?

RJ: Give users more and new content and higher definition services, and they will continue to use more. It's going to happen.

I have 13 pages of applications on my iPad. I used to go to the bookstore and buy my kids books. Now I download them

on my iPad immediately, and the kids love it. The appetite for content continues to grow.

4G gives temporary relief, and aside from building a smarter network, reusing spectrum for 4G services more effectively is a requirement. So we're going to see smaller cell sizes effectively doubling and tripling capacity.

In some denser markets, you may see smaller base stations and micro base stations used to increase capacity. Other solutions look at how to offload traffic to femtocells or Wi-Fi. But the key is making that a seamless move. So far it's not seamless.

LL: Major radio access network vendors tout an end-to-end solution with packet solutions, while other players have a presence in the core network side of things. Where does Tellabs fit in? Is there a play for a combined backhaul/mobile core offering?

RJ: Backhaul and the mobile core are very synergistic. Many network complexities exist in the infrastructure chain that sits behind the base stations.

Tellabs is holding that whole chain. We are developing technology to ensure that an operator can deliver a service to the tower in the most optimal way and the most intelligent way. Future technologies will take even more advantage of the packet core.

We are in a unique position because capacity will be needed beyond what the macro network can provide alone. Operators need the ability to mix macro base station with micro base stations, femtocells and Wi-Fi.

Historically, operators were locked into one RAN solution. We are giving operators the ability to mix and match any base station with the packet core, so operators can pick any radio they want. That was a unique value proposition we brought to the table as we help deploy the largest WiMAX network today. This decoupling capability means RAN expenditures can be cut by as much as one-third. ■

3G: Third Generation
3GPP: Third Generation Partnership Project
4G: Fourth Generation
IP: Internet Protocol

LTE: Long-Term Evolution
QoS: Quality of Service
RAN: Radio Access Network
WiMAX: Worldwide Interoperability for Microwave Access

Be more than bandwidth. Personalize your pipes.

Dumb pipes can't personalize the mobile Internet. But a smart network can. Users gain customized services and bandwidth choice. You gain new revenue streams, reduced costs and sustained profitability.

Visit tellabs.com/4g to download a free white paper on the smart mobile Internet.

WHITE PAPER

Value-Based Mobile Services Create New Pricing Models



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Overview

The enormous popularity of smartphones and other advanced mobile devices opened the spigot for thousands of application downloads. The resulting flood consumes enormous amounts of bandwidth in mobile networks. As a result, many operators are abandoning unlimited-usage pricing plans in favor of tiered billing, an approach in which consumers pay a flat rate for data usage that is limited to a pre-defined amount, for example, 200 Mbps or 2 Gbps per month. Operators hope this new billing approach discourages "excessive" use of bandwidth. The goal is to retain subscribers with in-demand services and rein in CAPEX/OPEX costs for ever-greater amounts of network capacity.



Smartphones create the potential for new value-added mobile services.

Yet tiered billing, in and of itself, presents two problems. First, it is impossible to change user behavior instantaneously. Most users inevitably will exceed data-usage limits and experience sticker shock when they receive their bills. That will produce more subscriber churn or, at the very least, lots of irate subscribers who believe service providers are charging them unfairly. Secondly and equally important, because tiered pricing does not change the operator's role as a utility provider of a dumb pipe, it does little to strengthen the operator's chances of long-term competitive success.

In addition to providing additional revenue streams, such services help operators reduce CAPEX/OPEX costs as they increase network capacity. The Tellabs 9100 platform, for example, aggregates on a common platform several network functions that historically have resided in separate network elements, including peer-to-peer traffic management, new charging functions, quality of service (QoS) policy enforcement, filtering and compression.

Cloud as a Service

Consumers clearly will continue to use mobile-branded devices for access to a growing array of applications and services. Most people quickly identify favorites, for instance, social-networking and video applications, which they integrate with their everyday lives. In other words, these applications and services provide value to consumers, above and beyond access to the network.

Value-Based Services Offer a More Effective Pricing Approach
While acknowledging that tiered pricing based on policy control is an important step toward achieving long-term profitability, leading operators are going a step further, namely by incorporating value-added services in pricing models. The ability to create customized services and bundle them with a tiered pricing structure requires a subscriber- and content-aware networking solution, such as the Tellabs® SmartCore™ 9100 Platform.

Compatible with both 3G and 4G mobile technology, this next-generation platform delivers comprehensive, real-time intelligence about customer requirements and behavior, including where a given customer is physically located and the content he/she is using. Using a network that is aware of both customer content and context, operators can deliver content-inspection services that are customized, value-added mobile Internet services that translate into strategic differentiation and real-world advantages, which lead to greater market penetration and stronger margins.

With a subscriber- and content-aware network, an operator can offer consumers a choice of vertical services, with each one tailored to an individual user's usage patterns, as identified by the network. For example, users who frequently use

