



Close the customer experience gap for profitable LTE success

Tektronix Communications provides service providers and equipment manufacturers around the world with a suite of network diagnostics and service assurance solutions for fixed, mobile, IP and converged multi-service networks. In 2009, the company acquired Arantech, a supplier of Customer Experience Management (CEM) solutions that manage the customer experience gap – the difference between what traditional network management systems see and what customers actually experience. Here, Lyn Cantor and Brian Carroll share their vision of the future.



◀ **Lyn Cantor** is president of Tektronix Communications. Previously, he was senior vice president and general manager at Visual Network Systems (VNS) and vice president of worldwide sales, service and marketing at Tektronix Communications. Over the course of his career, Cantor has held various vice president positions in Americas sales, global channels, product management and marketing in addition to having general manager responsibility.



Brian Carroll currently holds the position of vice president and general manager of Arantech. Carroll was part of the Arantech executive team prior to the acquisition of Arantech by Tektronix Communications. Carroll has over 20 years of experience in communications technology and telecommunications, and has been with Arantech for seven years. ▶



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VanillaPlus: How is LTE different to 3G?

Lyn Cantor: There are some architectural characteristics about LTE that are different from 3G, which has been well discussed over the past few years, but most important is the change in customer expectations. More bandwidth brings more applications and customers that are focused on their personalised interaction with these applications. It is critical now, more than ever, to focus on the customer and their quality of experience, as they hold tremendous power in today's competitive market, and continue to expect better services at lower cost and higher quality.

Brian Carroll: The end user will expect LTE to provide a continuation and improvement of the capabilities that 3G services already deliver. LTE will provide operators with the bandwidth needed to meet the demand for high speed mobile broadband and data services, and provide them with the ability to develop a range of services tailored to suit individual subscribers. The key differentiators between LTE and 3G are the sellable on-demand capabilities of the overall network, which enables the evolution of advanced applications such as online gaming, high quality video conferencing and other real-time applications on smartphones and tablets.

This all IP mobile network will come to be scrutinised by its users in much the same way as fixed broadband. LTE offers more segmentation in terms of quality of service (QoS) selection and management, which can be monetised. As a result of this there will be a renewed focus on delivering and measuring such capabilities.

Given the heightened importance of customer experience, CEM will become an integral component of LTE networks and it will continue to visualise all aspects of the quality of experience and monitor the latest trends in the mobile application market as the user community migrates to LTE.

VP: What are you seeing as some of the biggest challenges operators are facing with the deployment of LTE?

LC: Although LTE promises to be a more simplified, cost-efficient architecture to deploy

and maintain, there are some unique challenges that operators will have to contend with if they hope to deliver quality services and applications profitably within the new mobile data-centric business model. The first of these challenges is QoS. With the need for end-to-end network QoS and with QoS mechanisms well-established in the IP core network, LTE as a new mobile access/core technology must deliver on its own promise of quality, which is not an easy task given the underlying complexity of LTE with its multiple classes of service. The other challenge is interoperability. LTE is initially being deployed alongside many legacy 2G/3G technologies and managing QoS and customer expectations across common applications will be a challenge given the network and bandwidth limitations of legacy systems.

In addition to the quality issues mentioned, LTE will have a huge impact in data traffic volume with a 10-20x reduction in the cost per bit relative to 3G systems in place today. With LTE driving data traffic, operators will require greater visibility to understand how their network resources are being utilised to deliver high-quality services at the lowest possible cost.

BC: To begin with, LTE will need to address high-end data users and provide coverage across the popular 3G regions. Operators will need to develop a range of new service tariffs and promote them to their existing 3G subscribers to encourage end-users to migrate to LTE. In addition service providers will have to supplement their device portfolios with a selection of LTE handsets, and other connected devices, to offer to their subscribers. LTE is a more complex network and its dynamics pose a challenge to network probing and the CEM monitoring infrastructure, to provide actionable information to the OSS/BSS user.

A key challenge will be to deploy a cost-effective low OpEx infrastructure while delivering the promise of an enhanced experience to customers. Delivering a high quality of experience (QoE) to customers given the expectations set by LTE will be key to protecting revenue and increasing customer loyalty. Efficient monitoring of the customer QoE will be key to building the LTE user base. CEM provides customer-centric insights which assist in



providing an accurate profile of the subscriber's end to end experience.

VP: How can operators address these issues?

LC: Ultimately, operators need to answer the question - How do we profitably deliver customer-desired services and applications cheaper and better than the competition in an IP environment? In order for operators to rightfully focus their attention on top-line revenue issues, new methods are required to manage the underlying complexity associated with network and service delivery management, and how these layers impact paying customers. Fortunately, a great deal of information exists within the network that can reveal a lot about an operator's networks, services and customers. This information can be used to correlate events at the network and service level with high-level business objectives, such as revenue generation, quality of service and churn. This information can also provide operators with an actionable path to identify and resolve revenue and cost impacting issues.

BC: Operators can address these issues by putting into place the right systems and processes that will allow them to use the BSS and OSS data currently at their disposal. This essentially means mapping out what BSS/OSS and CEM systems can provide the level of QoS and QoE that is expected from LTE. Clever probing algorithms and network intelligence data extraction will become essential to make sure that CEM continues to hit the sweet spot in the mix of OpEx/CapEx versus customer insight. CEM implemented to support LTE will allow operators to maximise their visibility of all aspects relating to the customer experience, everything from the handset type, location, through to QoS requested versus granted.

It is imperative that operators keep up-to-date with subscriber demands, preferences, and lifestyle in order to make better informed marketing and technical decisions. With LTE's more discrete CEM quality measures, an operator can confidently capture and distribute CEM intelligence across a wide range of its departments.

VP: How specifically are Tektronix

Communications' network management business and Arantech working together on LTE deployment?

LC: LTE is a major technology turn which has and will continue to impact multiple parts of the technology lifecycle. From network equipment manufacturers (NEMs) in the lab doing functional tests to operators in the field conducting trials that eventually lead to commercial roll-out, Tektronix Communications is involved in virtually every aspect of the of this process. Our network management business works closely with Arantech to offer scalable CEM and monitoring solutions. These solutions allow operators to manage and optimise their network from the customer perspective, providing them the opportunity to proactively build enhanced loyalty, strengthen their brand and meet their return on investment goals.

BC: Arantech's CEM product portfolio integrates Tektronix's state of the art LTE probing infrastructure. This integration serves to present a candid representation of a much wider experience landscape than is possible from network infrastructure systems. Both product families are jointly road mapped.

VP: With operators around the world at different stages of LTE deployment can you give some words of advice for those who are just starting to think about transitioning to an LTE network and those who have already rolled out?

LC: With regard to LTE, a critical point to remember is that it is imperative to proactively monitor and manage the network not only during the initial technology launch, but also just as importantly as the network and LTE services continue to grow and mature. Today, we see many cases where the network is working fine in terms of delivering services and applications, but the consumer may be experiencing problems that the operator may not know about; such as the time it takes to download or set-up an application, even or specific attributes related to the performance of the application. Closing the customer experience gap – the difference between what customers expect and what the network is delivering – is the key to ensuring customer satisfaction and retention and ultimately a profitable LTE business.

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**Brian Carroll,
Arantech**