

OSS for LTE: Paving the Pathway for Success

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With NTT DoCoMo's recent announcement that they will launch their LTE network in 2010, all eyes are on the Japanese operator and its quest to deploy the most sophisticated mobile network yet. Here is our ringside view on the OSS implications and requirements when considering an LTE rollout.

Before we dive into the OSS challenges, let's step back take a moment to discuss why a number of mobile operators across the world have made public announcement with committed timelines on LTE rollouts.

Key Drivers behind adoption of LTE

LTE - the next generation high bandwidth mobile



interactivity and content coupled with widespread adoption of smart phones has pushed the mobile operators to accelerate their deployment plans for LTE.

The key benefit of LTE is the ability to offer complex content rich applications over wireless infrastructure. In the new mobile environment,

An advertisement for NR Group. At the top, the logo 'NR GROUP' is displayed in blue. Below it, the text 'NEW PARADIGM RESOURCES' is written in a blue box, followed by 'STRATEGIC CONSULTING & RESEARCH FOR COMMUNICATIONS INNOVATORS'. The main image shows two hands shaking over a table with a mobile phone and a pen. To the right, the text reads 'Looking for the right decision?' in red and black, with a circular arrow icon and 'TRUST OUR EXPERIENCE TO GUIDE YOU' below it.

network is aimed at improving current consumer access to complex content rich services over wireless devices. Japan-based NTT DoCoMo is motivated to roll out the first LTE network, because of the regional demand for advanced wireless applications and solutions. The demand for video,

wireless broadband speeds have increased from 384kbps to 21 Mbps for 2-3G and in theory up to 100MB+ for LTE. For hopeful mobile operators, this means that LTE will enable unifying the voice oriented environment of today's mobile networks

with data-centric service possibilities of the fixed Internet.

For consumers, the enriched user experience will be typified by the large-scale streaming, downloading and sharing of video, music, and rich multimedia content as well as ultimately streaming HD TV services over mobile devices.

For business consumers it will mean high-speed transfer of large files, high quality videoconferencing and secure nomadic access to corporate networks.

As operators consider the benefits of deploying LTE, they must consider some very important questions. What is the current demand for delivering content rich offerings over mobile, and

deployment, the design and planning capability needs to fully support both the design and the deployment steps in a unified process flow. LTE deployments will utilize a combination of existing infrastructure assets such as location of sites with new infrastructure and equipment. It will also require optimizing the mix between existing and new assets. The design and planning process needs to have this complete end to end view and be able to allocate appropriate resources and assets including human assets to ensure a cost-optimized deployment

Automation - In addition, automation is key to cost-effective and on-time project rollout. Process automation for network rollout should include work order management, configurable process



what does my current infrastructure scenario look like?

OSS for LTE

There are several key OSS parameters that operators should invest in when planning LTE rollout.

Network Design and Planning - For the successful LTE deployment, network design and planning plays an integral role. For a successful LTE

templates, and seamless integration of design and planning processes with other day-to-day processes such as service delivery, maintenance and support, consistent scheduling, and optimization of the workforce load. Use of telecom-aware workforce management system that is optimized for mobile operators can go a long way in rapidly monetizing the investment that is being put into LTE rollout.

Optimizing the Back-Haul. - New LTE traffic brings along higher bandwidth consumption and its impact will be felt on the backhaul network immediately. Capacity optimization and dynamic bandwidth allocation becomes central to backhaul upgrade and deployment. Reuse of the existing (UMTS or other) backhaul is not an option.

Service Management - Another key aspect to successful LTE deployment is enhanced service management. With the provisioning done partly by the network itself (IMS and/or SDP based service fulfillment), the need for a flexible/configurable and extensible service catalog allowing for modeling of complex IP-based services is higher than ever. Such service catalog will have to be based on latest industry standards for flexibility and interoperability and will have to accommodate CFS (customer facing services) and RFS (resource facing services) service categories to ensure proper degree of functional componentization and maximum network resource utilization.

Service Assurance. To ensure that users getting the quality they pay for, a deep understanding of the service experience coupled with service quality management across a diverse set of devices and dynamic user preferences becomes the foundation of LTE assurance. Speeding up trouble resolution by correlating service monitoring with service topology will also become important and real time video and other media –based applications will require much more real time monitoring.

Device Management. As diverse set of smart devices become part of the overall mobile broadband era, they also become part of the OSS considerations for LTE. The access bandwidth for LTE will be comparable to fixed broadband, which is common in many homes and businesses today. However, mobile handsets have yet to incorporate some of the elements of remote management, and service providers will struggle to manage or troubleshoot the devices, especially as users begin

using third party devices. This influx of new devices will throw up a host of challenges around remote management, version control and backwards compatibility.

Inventory - Lastly, inventory is critical to the successful LTE rollout. As with any other technology rollout, LTE requires a unified and sophisticated infrastructure model to enable resource lifecycle management, configuration management, and to ensure maximum resource and asset utilization. With the LTE infrastructure spanning all kinds of backbone technologies, the inventory needs to be flexible enough to accommodate the current multi-technology views and be prepared for possible future extensions.

LTE will bring with it an exciting future. Through the combination of very high download and upload transmission speeds, more efficient and flexible use of spectrum and reduced packet latency, LTE promises to enhance the delivery of mobile broadband services while adding exciting new value added service possibilities.