SUCCESS STORY
SOFTBANK MOBILE, JAPAN

MAPPING SUCCESS

SGSN-MME Smart and Adaptive Paging functionality optimizes signaling in highly populated metropolitan areas
The telecoms landscape in Japan is experiencing an exciting period of evolution. The country is a pioneer in new mobile services, a front runner in LTE and it has one of the highest rates of subscribers using smartphones in the world.

For the technology-savvy users of Japan, a superior mobile broadband experience is vital. As operators evolve their offering to meet customer demands, it is important that their networks are prepared to handle faster speeds and higher quality performance.

Japan’s fastest growing operator, SoftBank Mobile is doing just that. In 2012 the company upgraded its network to be able to offer high speed mobile data services over LTE to its subscribers. This was a crucial move, considering the highly populated metropolitan areas such as Tokyo that it must cater for.

Rapid traffic shift
Yoichi Funabiki, Director Mobile Network Planning Division, Core Network Department, SoftBank Mobile explains: “In the Japanese market, mobile services are widely penetrated. It is one of the most advanced markets in the world when it comes to high speed LTE network deployment.”

SoftBank Mobile worked with Ericsson to expand its network. In managing the rapid traffic shift from WCDMA to LTE, a highly resilient and scalable solution was needed. SoftBank Mobile chose a complete Evolved Packet Core solution from Ericsson. The upgrade brought with it new challenges, as Yoichi Funabiki explains: “Because of the rapid coverage expansion of the high performance network and the penetration of LTE-supported devices, communication speed is getting faster and faster. Due to the different devices being used and the application development taking place, signaling is actually increasing.”

To maintain control of this, SoftBank Mobile implemented innovative functionality in its highly capable EPc solution. This included Ericsson SGSN-MME Smart and Adaptive Paging functionality, with the aim of optimizing the handling of the signaling and ensuring a robust LTE network was in place.

Paging patterns
Yossi Cohen, President & Representative Director, Head of Global Customer Unit SoftBank Mobile, Ericsson explains how the Smart and Adaptive Paging functionality operates: “Every time somebody accesses the application or, moreover, even if the application is trying to notify the user, it means the network needs to find the user. Smart and Adaptive Paging will basically allow the operator to map, for each different application, what kind of paging patterns he would like to use.”

“For example, Voice over LTE (VoLTE) requires a very fast response from the user – so the network will use a mapping algorithm for a wider area, to find users as quickly as possible. While, if you’re using social media you’re less stressed in time, so you will use a more cost-efficient paging pattern.”

Superior performance
By using Ericsson’s innovative signaling optimization functionality, SoftBank Mobile has achieved network stability, high availability and superior performance for its subscribers. KPIs show it is the best performing EPC network globally and SoftBank Mobile is regarded as having the highest quality of network performance in Japan.

Seiichi Tateishi, Manager Mobile Network Planning Division, Core Network Department, SoftBank Mobile goes into detail: “By utilizing SGSN-MME’s Smart and Adaptive Paging functionality, without compromising quality we could reduce the load for both the RAN and EPC network. Signaling has been reduced by 70 percent and also MME CPU load has been reduced by...
Without compromising quality, signaling has been reduced by 70 percent, reducing our future capital investment dramatically.”

Seiichi Tateishi, Manager Mobile Network Planning Division, Core Network Department, SoftBank Mobile
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Yossi Cohen,
President & Representative Director,
Head of Global Customer Unit SoftBank Mobile, Ericsson

A SOLID FOUNDATION

To manage the rapid traffic shift from WCDMA to LTE, SoftBank Mobile chose a complete Evolved Packet Core solution from Ericsson. This highly resilient and scalable solution included: SGSN-MME with innovative functionality to optimize and control signaling, Evolved Packet Gateway, Service-Aware Policy Controller and Service-Aware Support Node.

In addition, the LTE Radio Access Network was deployed, using the RBS 6000 multi-standard radio base station. Services were also provided, including Network Design and Optimization, Systems Integration and Learning Services.

Softbank is also preparing its network to launch VoLTE by upgrading its core network with the Ericsson IP Multimedia Subsystem, and preparing the installed base Ericsson Mobile Softswitch Solution, Evolved Packet Core and LTE RAN network for this new technology.

The Ericsson Evolved Packet Core solution is designed to provide high availability and scalability, giving operators the flexibility needed to meet growing demand for real performance and expansion into new markets.

Almost half. And because of this we are able to reduce our future capital investment dramatically.”

“So far, LTE has been deployed for high-speed data communication and for the future introduction of VoLTE it is necessary for us to optimize our network for voice communication. By doing this paging profile by service type in SGSN-MME, we can enable effective signaling, depending on the urgency of communication.”

Strong collaboration

The collaboration between the two partners is very strong. SoftBank Mobile chose Ericsson because it believed that Ericsson’s EPC offering was the best technical solution and were impressed with its high end-to-end knowledge. In addition, it perceived Ericsson to be a capable Service Delivery organization that could provide a complete offering to fit SoftBank Mobile’s needs.

Yoichi Funabiki, Director Mobile Network Planning Division, Core Network Department, SoftBank Mobile emphasizes this: “We have a deep relationship with Ericsson and we have a close collaboration from introduction to operation. Ericsson is a very important partner for SoftBank Mobile that’s for sure.”

Overview

Customer
› SoftBank Mobile, Japan.

Challenge
› Secure high performance mobile broadband services following the rapid traffic shift to LTE.
› Prepare for VoLTE.
› Manage signaling increase in the most highly populated metropolitan areas in the world.

Solution
› Complete Evolved Packet Core solution, including SGSN-MME Smart and Adaptive Paging functionality to optimize signaling.
› Deployment of LTE RAN using the RBS 6000.
› Full suite of services.

Results
› Reduced signaling by 70 percent in RAN and EPC.
› Reduced MME CPU load by almost 50 percent, dramatically reducing the need for future capital investment.
› Network stability, high availability and superior performance.