A Behavior-Based SON™
Cellcom Case Study

Background
Cellcom Israel Ltd., established in 1994, is the largest Israeli cellular provider; Cellcom Israel provides its approximately 3.010 million cellular subscribers with a broad range of value added services including cellular and landline telephony, roaming services for tourists in Israel and for its subscribers abroad and additional services in the areas of music, video, mobile office etc., based on Cellcom Israel’s technologically advanced infrastructure. The Company operates an LTE 4 Generation and HSPA 3.5 Generation networks enabling advanced high speed broadband multimedia services, in addition to GSM/GPRS/EDGE networks.

Key Deployment Facts
Production Date: Since 2011
Subscriber Base: > 3.0M
Network Size: 6 MSCs, 80M CDRs/Day, 30 RNCs, 45 BSCs, 25,000 sectors
Network Type: 2G (GSM/GPRS/EDGE): Nokia
3G/3.5G (UMTS/HSDPA+): Nokia /Ericsson
4/4.5G (LTE): Nokia

Challenges
The massive growth in data consumption in the world and in Israeli, including by Cellcom Israel subscribers, fueled by technological advances in smartphones, applications and network infrastructure, has prompted Cellcom Israel to extensively expand its 3G network. This, together with the ongoing rollout of Cellcom Israel’s 4G network, has required constant adaption to the various emerging technologies. Maintaining high performance over all network generations compels Cellcom Israel to split its engineering resources between the rollout and expansion of new technologies and the support of existing systems. Cellcom Israel chose the SON path, and its concepts became key elements in helping it overcome these challenges.
The solution -
CellMining’s Behavior-Based SON™

CellMining’s unique solution optimizes networks by analyzing usage patterns, and cross-checks its findings with technical OSS data (counters), GIS sources and network policy administration systems. The augmentation of rich subscriber information and feedback makes this data analysis solution the most comprehensive on the market.

Cellcom Israel’s engineers were extensively involved in the SON deployment and their input from trials and live production test deployments has helped to make CellMining’s Behavior-Based SON™ solution the most robust, reliable and production-proven option in the market.

Solution Scope

Cellcom Israel uses CellMining’s SON solution in its macro network, comprising Nokia and Ericsson for the 3G infrastructure and Nokia systems in its GSM and 4G networks. CellMining’s SON solution is used mainly by the RF engineers, but NOC (Network Operations Center), Core and VAS (Value Added Services) teams also use the information generated by the solution. CellMining’s Behavior-Based SON™ provides Cellcom Israel with on-going optimization, including the automation of optimal neighboring sector configuration and adaptive settings for load balancing, resulting in enhanced mobility and performance for its subscribers.

But for Cellcom Israel, the solution delivers much more than the ongoing optimization of the network performance. It audits and cleans up misconfigurations and settings in the network that are against the carrier’s RF policy, such as detecting physically crossed cables. For Cellcom Israel and for any other carrier, a ‘clean’ network means even better performance.

CellMining also provides Cellcom Israel with a third important functionality - the ability to inspect network data and surface problems from the perspective of the subscriber, checking what issues they have and how to resolve them. “For example, we had subscribers complaining about disconnections”, Mr. Bar further explains, “When we checked the root-cause using CellMining’s solution, we found out that the problems were caused by the other side, on a different carrier’s network”.

Benefits

- Providing an improved customer experience for subscribers.
- Maintaining good performance of all networks while rolling out 4G and expanding the 3G network.
- Enabling pro-active resolution of subscriber issues and call quality problems at the root level.

Summary

Cellcom Israel benefits from a high performing network, well utilized across multiple generations and multiple technologies and vendors. Mr Bar says: “Cellcom Israel still faces a lot of technological challenges in the coming years. Solutions like CellMining’s Behavior-Based SON™ will help Cellcom Israel to mitigate these challenges”.

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“CellMining’s SON solution helped us overcome the huge challenges created by the rollout of 4G and the expansion of 3G networks”

Mr. Baruch Bar, Radio System Engineering Manager, Cellcom Israel