RAN Research Note:

SON is now critical to make LTE economics work

Caroline Gabriel, February 2014

Summary

SON (self-organizing or self optimizing network) has been one of the most discussed and least implemented new technologies in the mobile world. That is about to change. With operators deploying ever-smaller cells, SON stops being a 'nice to have' and becomes critical to the business case.

Mobile operators hope SON will make their mobile broadband investments commercially viable. By automating many planning and management tasks, it can speed time to market and save on the operating costs of manual processes. This is especially critical when carriers start deploying large numbers of small cells, in order to ensure they deliver targeted capacity, rather than radio chaos, and in challenging cost and time parameters.

To read some discussions, it could be imagined that SON was already a widely deployed technology, but in fact it is in its infancy. There has been some activity, mainly in 3G – for which it was not originally designed – but while nearly all cellcos have a high level of interest, widespread commercial implementation for 4G or small cells remains weighted to 2015 and later. This is because there are many questions still to be answered, about which of the 30+ use cases will contribute to the operator's business model, and which architecture will best support those cases. The uncertainties are even greater when it comes to small cells, and indeed, the wait for fully mature SON tools is one of the reasons that some carriers have delayed mass roll-out.

SON platforms:

SON is an important tool in getting the greatest performance and efficiency out of a network, but it has a very specific set of functions and should not be seen as a catch-all solution. It works best when working closely with other network performance tools and companies like Amdocs are looking to build full platforms, in which the SON can be fed with data from many OSS/BSS sources, in order to make it more responsive, accurate and targeted.

A SON system tunes network performance as optimally as possible by setting configuration parameters in cell sites of all sizes. These parameters may change as often as four times an hour, allowing the network to respond to changing conditions such as varying traffic patterns, or faults in a certain cell. Basic parameters include maximum RF power levels, neighbor lists and frequency

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About the author:

Caroline Gabriel has spent 25 years analyzing the technology market, starting as a journalist and then moving into research and consulting. She was European content director at VNU, then Europe's largest technology publisher and co-founded Rethink Technology Research in 2000 to focus on emerging wireless platforms and operator business models. After Rethink combined its research offerings with those of Maravedis, she became the Research Director for the whole venture. In addition, she leads the RAN practice and the Wireless Watch weekly research newsletter.

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