



Organised, Optimised and Proactive: Has SON Arrived?

InterComms talks to Neil Coleman, Global Director of Marketing, Actix, about Self Organising Networks



Neil Coleman, Global Director of Marketing, Actix

Neil draws on over 15 years of industry experience in marketing, product management and R&D roles at Actix, Micromuse and IBM. Over the last six years he has been responsible for bringing Actix's ground-breaking suite of mobile analytics and optimization solutions to market. These solutions are helping over 100 operators improve mobile customer experience and streamline their technology rollouts. At Micromuse Neil was instrumental in the development of their service management product line. Starting from scratch it grew to account for over 30% of Micromuse revenues

within two years. Subsequent to this he led the creation of Micromuse's traffic monitoring solution. At IBM he was responsible for IBM's SLA management portfolio, helping establish IBM's positioning in an emerging field.

Q: Where are we with self-optimizing networks and why are mobile operators interested in SON?

A: Well, self-optimizing networks (SON) is a relatively new term for an old concept. For a long time now mobile operators have looked to use software to automate the planning, configuration and management of their radio access networks (RAN). They've needed this automation due to the complexity and size of the networks which make manually configuring and adjusting network parameters very difficult and time consuming.

The renewed focus is down to a fundamental shift in network economics. The data explosion we're witnessing is driving down margins at the same time as greatly increasing the complexity of the underlying network infrastructure.

As a result mobile network operators, through an industry body called NGMN (Next Generation Mobile Networks) put pressure on the standards bodies, specifically 3GPP, to add automatic optimization capabilities into the standards for LTE. These automatic optimization capabilities have been labelled SON – self-optimizing or self-organizing networks.

Companies like Actix have subsequently taken these SON concepts that were developed for LTE networks and made them available for 2G, 3G and LTE networks at the same time. ►

► **Q: Can SON be used as a tool to proactively drive improvements in experience for the subscriber?**

A: Yes, this has been our aim all along.

The big initial driver for SON – increasing automation – is to reduce network OPEX. Basically the time and effort needed to manually configure networks is just too high. Operators don't have enough skilled engineers to do that work so what SON through automation aims to bring is a reduction in OPEX or more precisely a reduction in the rate of OPEX increase. In our deployments we reckon OPEX can be reduced by about 80% by deploying SON capabilities.

But beyond the initial goal of OPEX savings it's clear that SON improves customer experience too. Automating complex optimization activities will enable network tuning to be carried out where previously it couldn't be done manually. SON will fix coverage holes, distribute network capacity and address mobility problems automatically. We see this improving subscriber experience on the whole by 10 to 25% less dropped calls, improvements in throughput rates and so on.

But Actix goes one step further. We are pretty unique in the fact that we can capture direct insights into subscribers, their location and the quality of experience the network is delivering to them; something we refer to as "customer experience geo-location". For example, our data allows operators to see that at the corner of a particular street there's a coverage problem, and in another location there's a high level of demand that's not being supported by the network itself. When segmented we can work out where key high-value customers are. For example you can say that this particular area is extra-important because there's a group of VIPs and corporate customers here as opposed to other areas where there are less valuable subscribers.

Feeding these insights into SON you can automatically optimize the network to improve the experience of these key subscribers and therefore improve customer experience

much more dramatically. With a number of operators we have seen that you can eliminate about 70% of issues experienced by VIP customers.

In addition to improving customer experience and reducing OPEX, SON also benefits CAPEX. SON ensures maximum coverage and capacity is delivered from the existing network infrastructure. This means they don't have to invest as heavily in their current networks so they can save cash for their LTE rollout, saving CAPEX.

Q: Are there any potential barriers to SON being deployed and if so, how could these barriers possibly be overcome?

A: Well, with any automation technology, if you look at autopilots on aircraft or these automatic steering cars that we are starting to see, the big challenge facing the adoption of SON and automation is trust.

Self-optimizing and self-organizing networks by their nature run in what we call closed-loop mode, in that there is no human intervention whatsoever. People who are used to having lots of visibility into and control over their networks now have to trust a third-party system to manage it for them. The operators we are speaking to are very aware that they are sacrificing control of their network and are nervous about that.

A second related barrier is the deployment model being used – do you just flick a switch and automate the entire network from day one or do you pick a few key regions and automate those? Operators are often interested in quick wins to validate the adoption of SON.

From our experience we've seen that operators will willingly adopt automation and SON, but only if they can retain some degree of control, say visibility into why decisions are being made, and if they can stop the automation and manually approve the automatic configuration when they need to. As a result of this and



Increasing network complexity is driving SON. Typical network infrastructure for one square kilometer inner city in 2015. © Actix

- ▶ because of our background, we have created a very flexible SON framework. Our software allows operators to start out in “open loop mode” (semi-automated), interactively running use cases and validating their results before going to a fully “closed loop” model either nationally or in key regions.

The third barrier to SON deployment is basically who to buy it from. SON is broadly being offered by two distinct groups. The first is network equipment providers (NEPs) like Ericsson and Nokia; the second group is independent software firms like Actix.

And when assessing the right option, it's evident that network equipment providers' business models are primarily focused on selling hardware and services. However deploying SON capabilities to automatically optimize networks threatens both hardware and services revenue streams. If you optimize a network to squeeze more out of it you don't have to put as much hardware into it to get it to do its job. The automation that SON delivers reduces reliance on proprietary services teams.

So ultimately NEPs are reluctantly delivering SON capabilities partly because it's in the standards and also because operators are demanding it, but we certainly do see an inherent conflict of interest there. What Actix and others believe is that you should buy SON capabilities from suppliers with no agenda who are independent of the network equipment providers – we just want to optimize the network, we're not trying to sell you hardware or services.

Q: How will SON evolve in the future and why should we look at deployment now?

A: Well with SON the clue is in the name itself – self-optimizing and self-organizing networks. It is in itself very much a network-centric capability. We believe the inputs to SON, how you drive the SON algorithms are beyond the network domain itself. We see SON algorithms taking inputs from customer experience like we do, and in the longer term evolving to factor in things like subscriber demographics, subscriber behaviour and how much they spend. It's all about allowing the network to automatically tune itself to

deliver the right customer experience to the right people, in the right location and at the right time. So instead of trying to optimize the network for everyone which you can't do because it's a limited resource, you very accurately tune your network conditions to deliver the most revenue from the customers that you have on the ground.

In terms of why we should be deploying SON now, it really goes back to the earlier point about the shifting economics of running networks. The networks are getting more complicated and the margins are getting lower and operators we are talking to see no alternative but to deploy SON capability in order to reduce OPEX and CAPEX and improve customer experience.

Q: How are Actix leading this area and how are you finding the marketplace reacting to SON deployments?

A: Actix is a software company which has been going since 1991. All of our investment since then has been focused on improving and automating the optimization and analysis of radio networks, so we have been delivering SON solutions to mobile operators before they were actually called SON.

We have great credibility with over 60 operators using our flagship optimization platform that can deliver SON capabilities. We believe we've got the strongest independent footprint available and we are in the right position to deliver SON capabilities as an independent software provider.

In the marketplace at the moment I think there's a little bit of “wait-and-see” going on. There are a lot of operators doing evaluations and working out what type of SON systems they want to deploy.

Ultimately we do see a bright future for this technology. In our domain lots of ideas go in and out of fashion, but ultimately that long-term pressure to reduce costs and to deliver much better margins on the data services that we need to deliver means that adopting automation, adopting SON, is very much an essential activity rather than a luxury.

For more information please visit:

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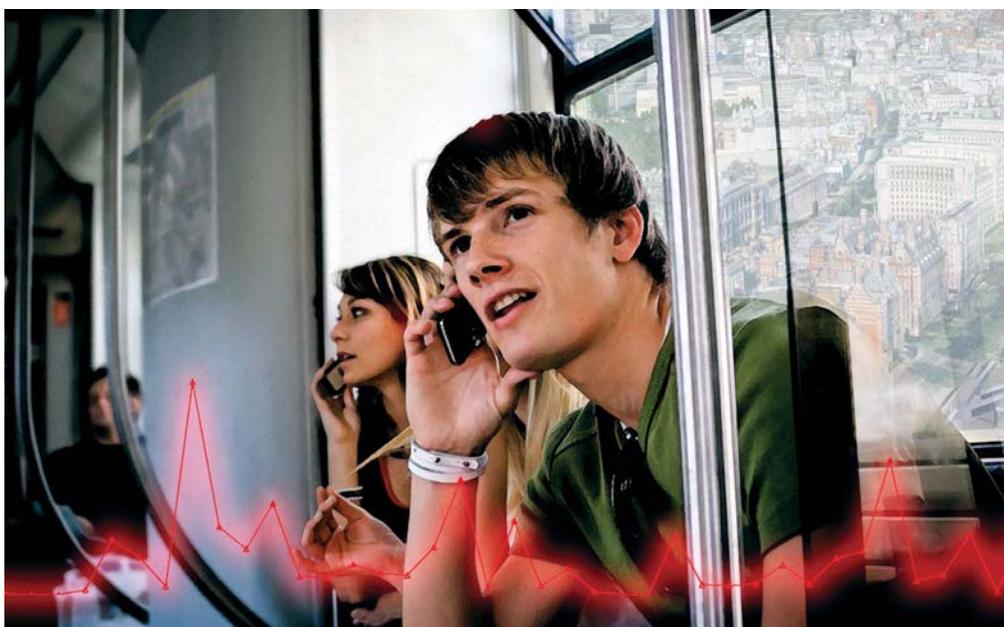


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