Hutchinson 3 Indonesia using spectral performance analysis to ensure extraordinary customer experience

Challenge

Get a more accurate and detailed view of network performance to achieve better targeting of investments.

Network performance analysis for better customer experience

It's vital that communications service providers (CSPs) invest wisely in their networks to ensure capital expenditure really does pay off.

To do this, they must know exactly where low data rate demand is in the network so they can efficiently supply the capacity needed

But do they have enough detailed data to achieve this?

This was the challenge facing Hutchinson 3 Indonesia, which wanted to better understand how its increasingly complex network was performing and make improvements to create a better experience for its subscribers.

A more granular approach

Conventionally, CSPs have relied on analyzing cells that have low average capacity performance indicators during peak traffic time intervals. But now, with the Nokia Spectral Performance Analysis service they can take advantage of a more granular approach to managing supply and demand in mobile networks. Instead of simply analyzing individual cells, Nokia Spectral Performance Analysis divides cells into multiple zones with similar characteristics, such as serving cell signal quality, neighbor signals analysis, user density, UE capabilities, downlink/uplink data rates, radio resource capacity spares, mobility and measures the Area Spectral Efficiency for each zone.

This helps CSPs to identify network throughput performance issues and provides automatic recommendations to allow them to prioritize capacity investments.

The solution is based on the Nokia AVA platform, which collects, stores and analyzes data from multiple sources, including Minimization of Drive Test (MDT) data. MDT allows performance data to be collected from Nokia and other vendors' networks, tapping into billions of anonymized measurement reports sent by ordinary mobile phones.

Machine Learning algorithms analyze the data and identify patterns of usage and network behavior to provide highly granular, sub-cell level insights about subscriber density, application throughput and radio signal performance.

This detailed level of analysis, systematically combined with Network Capacity Configuration and Performance Management (PM), helps network engineers understand where capacity is running out, or is sub-optimally configured, and how data throughput can be increased while predicting future demand from subscribers.

Hutchison 3 Indonesia can now plan more accurately and increase the return on network investments including future-proofing its evolution to 5G.

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Solution

Nokia Spectral Performance Analysis divides cells into multiple zones with similar characteristics, measures the Area Spectral Efficiency for each zone and automatically provides data capacity performance improvement recommendations.

Results

17 %

increase in spectral efficiency and cell throughput

60 %

Faster network management tasks processing

✓

Tune the network to provide better coverage and capacity to subscribers

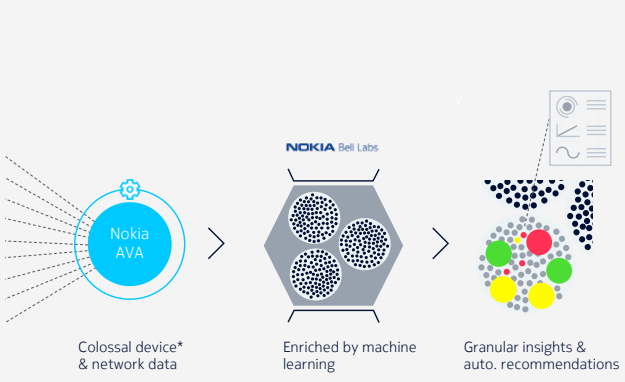
Machine learning provides more granular insights

With a more granular view of spectral performance in zones within cells, operators can predict future capacity demands with confidence, helping:

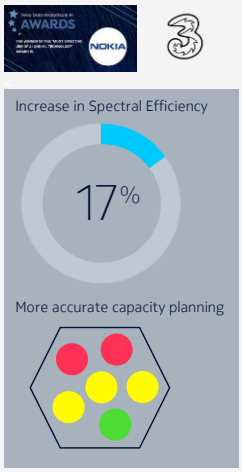
- Increase capacity planning accuracy
- Match capacity supply to predicted demand
- Eliminate overprovisioning to increase ROI by 15 percent

For **Hutchison 3 Indonesia**, the results were a 17 percent increase in spectral efficiency and more accurate planning of capacity to serve its subscribers.

> "AI will help us manage increasing complexity and make smarter decisions – to improve network performance for our subscribers"
>
> **Desmond Cheung, CTO, Hutchison 3 Indonesia**



* MDT (Minimization of Drive Test) data, 3GPP standardized feature



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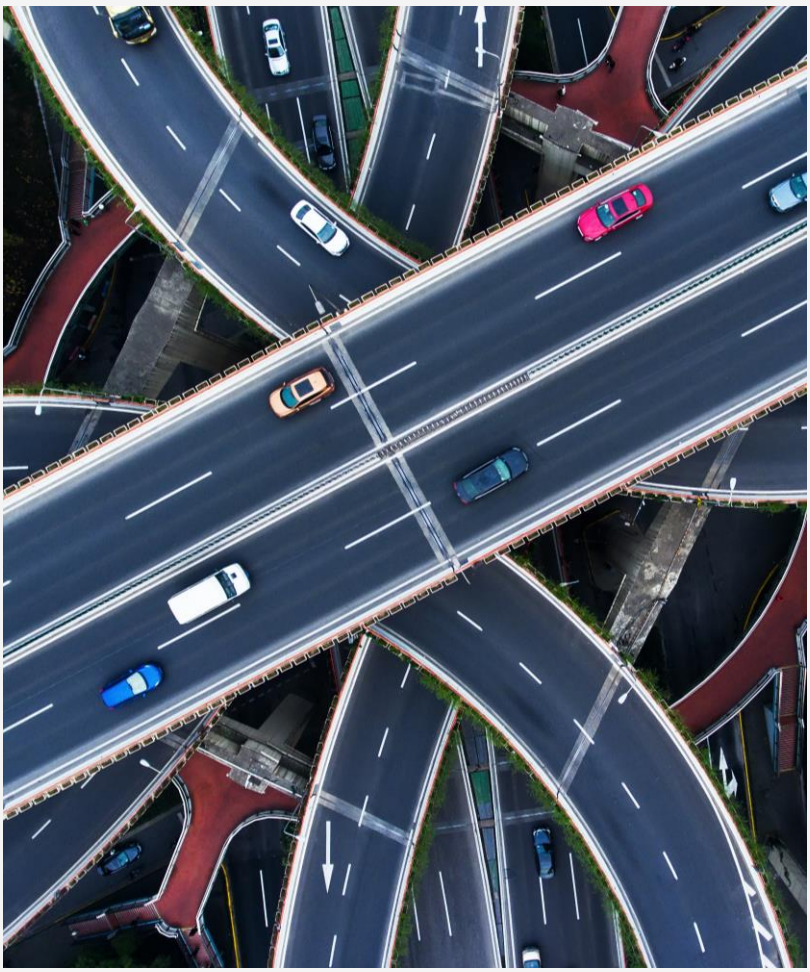
What is the Nokia AVA platform?

Nokia AVA integrates Automation, Virtualization and Analytics to deploy advanced services to CSPs. As a cloud-based platform, AVA offers centralized collection and processing of data from across the network and makes it available to any processing or reporting tool. This enables CSPs to achieve near-perfect network availability while providing ultra-low latency and high throughput.

"Nokia AVA is the most mature offering in the Telecoms AI Ecosystem market"

Telecoms AI ecosystems in digital transformation: increasing the level of automation in critical processes, Analysys Mason, July 2018.



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Through our research teams, including the world-renowned Nokia Bell Labs, we are leading the world to adopt end-to-end 5G networks that are faster, more secure and capable of revolutionizing lives, economies and societies. Nokia adheres to the highest ethical business standards as we create technology with social purpose, quality and integrity.

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