

InfoVista offers mobile operators the network intelligence needed to make the right strategic and operational decisions

The increasing complexity of mobile networks highlights why mobile operators should leverage their user and performance data to optimise quality of service while controlling network expenditure.

Yet, with many mobile operators managing second- and third-generation services while also rolling-out 4G/LTE systems, network planning and optimisation is no simple task, especially in the context of high mobile traffic growth, limited network spending and the need to keep customers happy with their mobile experience.

Because mobile operators must match rapidly changing customer demands with adequate capacity, constant network planning is mandatory. This means operators risk being overrun with troubleshooting and reactive performance management when they also need to be making larger strategic decisions.

To successfully manage such complexity, mobile operators need to pair subscriber intelligence and network performance data so the correct network planning and optimisation choices are made promptly and efficiently, and are always grounded in the reality of customer demand and experience.

That is why InfoVista is an important partner for more than 300 wireless operators across 120 countries. The company offers

scalable software that can be installed out-of-the-box and easily slotted into mobile operators' decision-making processes and ecosystem, efficiently driving network performance from the initial network planning stages through the ongoing improvement and network performance management of a mature network.

"We enable mobile operators to make the right decisions at the right time," explains Bernard Breton, chief marketing officer, and the company's senior vice president of sales for the Americas and Asia-Pacific. "It is all about helping them harvest useful data and leverage it for effective decision-making, in whatever network arena required by operators, from planning to optimisation."

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To extend its data collection reach, InfoVista recently acquired Malaysia-based Aexio, whose network optimisation technology helps mobile operators better tap user data, such as the location of customers and the types of devices they are using. That level of network usage insight is helping drive InfoVista's key focus: to enable mobile operators to better

plan, operate, optimise and monetise their networks in a way that will deliver tangible improvements to the subscriber.

The acquisition of Aexio enables InfoVista to offer a combination of live network call traces, drive test data analysis, network configuration checks and statistical data for benchmarking, troubleshooting and optimisation.

"It will give operators the ability to identify where subscribers are using their mobile devices geographically within the network, which is useful, for example, if an operator is trying to establish where VIP subscribers are using mobile data," says Breton.

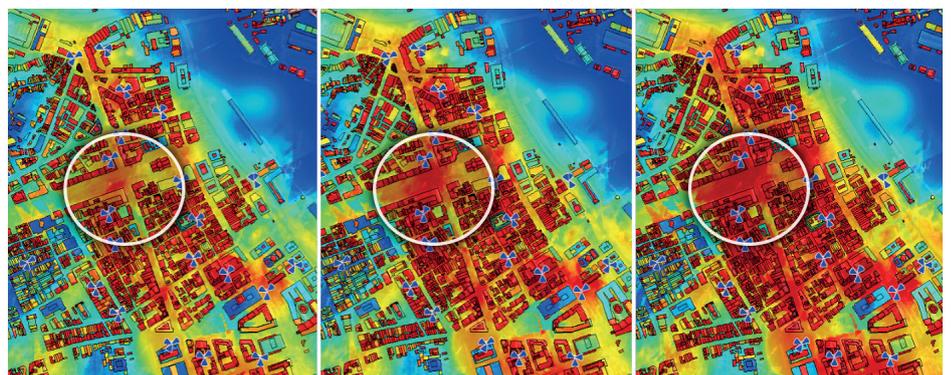
The acquisition will also help operators match this data with network performance information, so managers are warned if heavy users are experiencing connectivity or call quality problems, and with which device. By pulling user and performance data from all elements of an operator's business and integrating that information in a cogent and accessible fashion, service providers can better allocate capacity where it is most needed.

In short, InfoVista will be able to offer even more key performance indicators (KPIs) than it does already. More importantly, these KPIs will be subscriber-aware, and thus, far more relevant to a mobile operator that is focused on increasing customer retention by offering a better end-user experience.

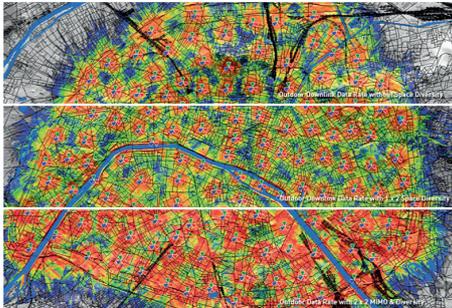
InfoVista seeks to streamline the complex network performance management and operational processes of operators, as the benefits of using live network information for the purpose of improving the network performance can only be achieved if the systems are efficient and well-integrated.



Bernard Breton, SVP, Americas & APAC Sales and Chief Marketing Officer, InfoVista



Comparison of three different antenna configurations in terms of end-user data rates



Traffic map forecasts enable mobile operators to accurately identify evolving hot spots month after month

“Mobile operators use many different systems to manage their networks and, more often than not, these systems are not working together,” notes Breton. “InfoVista offers a suite of open software products that work seamlessly and efficiently out-of-the-box and can be integrated into a multi-vendor ecosystem.” Breton explains that, while mobile operators tend to introduce network performance management practices for established systems, they have not yet made this a priority for new technologies like LTE networks.

The result is a piecemeal approach to network performance management. “There’s inertia, but they have system gaps. Legacy systems are unable to deal with new technologies, leading to a much more reactive vision of network performance management,” says Breton.

A new trend in the industry is to be proactive when it comes to managing quality of service through an end-to-end, multi-vendor, multi-domain network performance management strategy. In such an environment, mobile operators will typically implement a single network performance management system that can be scaled up and adapted to new services to manage all of an operator’s network technologies and actively assist in the roll-out of new innovations.

“We need to change the industry’s mindset about how to plan, optimise and manage network performance and, more importantly, the management of the subscriber’s perceived network performance,” stresses Breton. “We see the notion of network performance management as a continuum that starts with the initial planning of the network and ends at the ongoing

management of the subscriber experience.”

Operators should make strategic decisions for new networks from the outset, and then align future decisions with those decisions to ensure the proper management of ongoing network performance, rather than tactically responding to issues as they are raised by customers.

Following this strategy will enable mobile operators to ask key ‘what if’ questions at every step of their network’s evolution, such as where to deploy small cells, advanced antenna solutions and other next-generation technologies.

“There are a lot of different analyses that use feedback data from deployed systems in a useful way,” says Breton. “Tying measured behaviour into the network with simulations of the future state of the network makes it possible to pre-empt issues rather than simply react to performance degradation.”

For example, where are most subscribers currently located? Where are the VIP customers and how will their distribution evolve over time? How will growing smartphone utilisation impact the network? When will network saturation impact quality of service, and where will the effects be felt first? These questions can be used to guide

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capacity investments, ultimately ensuring that new network investments will deliver an optimal impact on network quality. Such strategic decisions can also be made on existing networks, of course, and InfoVista data helps here, too.

A good example, says Breton, is the evaluation of frequency band options.

Bidding for spectrum is an expensive business, and, once a company has secured the proper licensing, this resource must be fully utilised. Get it wrong, and the consequences could be very expensive for a long time. Running simulations with InfoVista’s network planning software can prevent those mistakes. For instance, according to Breton, InfoVista’s solutions can help predict when mobile operators might “run out of runway” for different bands.

“If you are going to run out of capacity on your 1,800 MHz band in the next 24 months, then bidding for 2.6 GHz spectrum now and aggressively implementing small cells on that band might pay off in the long run – especially if the alternative is waiting for the 2.1 GHz band to become available later,” explains Breton. “On the other hand, if you have eight years to plan, it could be more strategic to stick with the 1,800 MHz band for now and plan a slow ramp-up of small cells in areas where there might be congestion.”

Similar strategic decisions on capacity augmentation can be made with the help of InfoVista’s data regarding investments into small cells or Wi-Fi, for instance.

“You ground these decisions in what you know from your network. You cannot make these decisions in a vacuum,” stresses Breton. “The information gathered can also help a company decide when it needs to have a broad, strategic review that can lead to such important decisions,” he adds.

Real-time performance information, also known as KPIs, from InfoVista’s systems is essential. “The data can really drive an understanding as to when it is important to focus on strategic thinking.”

Once a new network technology like LTE is up and running, a robust and powerful network performance management system, such as InfoVista’s, is critical to balance user demand with network capacity. With so many new devices and mobile apps imposing unpredictable demands on capacity, this needs constant monitoring and care. “It’s a continuous cycle,” says Breton. “Networks are fundamentally dynamic.”

A good example is keeping tabs on mobile telephony’s big imponderable: radio signal

quality. Legacy usage pattern data can help mobile operators predict when growing demand might degrade the radio link performance and what impact it will have on subscribers' perceived network performance. An early deployment of an additional small cell, for instance, could eliminate future network and service performance problems that might have provoked customer churn.

These problems are increasingly important given that today's users expect uniformly excellent service, a requirement made more intense by operators' marketing efforts about new networks and technology.

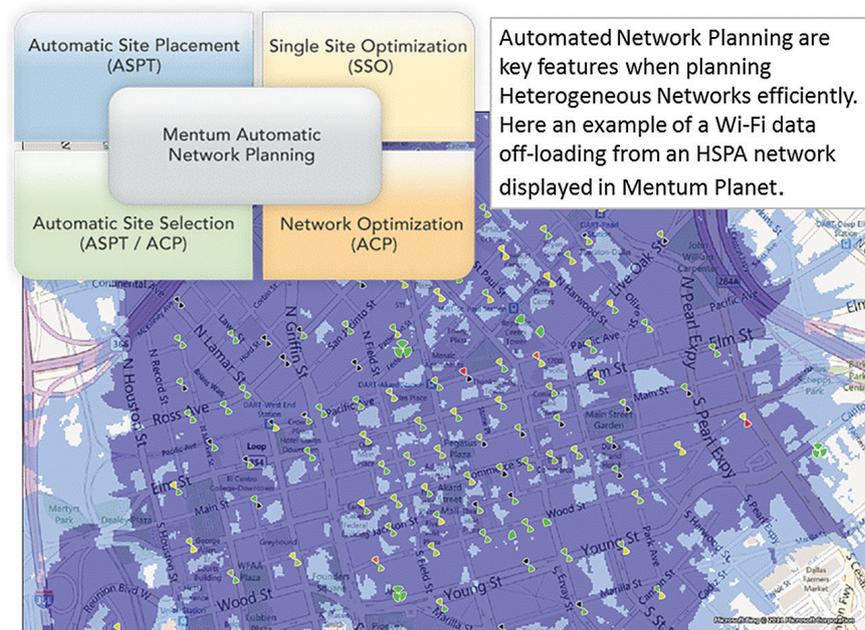
"If you are trumpeting that you have the fastest network in the country, yet subscribers are frequently experiencing poor network quality or a lack of coverage, that's going to create issues," notes Breton. "You have oversold what the network can do for customers, so, in essence, there is a mismatch between the expectation of ubiquitous high-speed data connectivity and the reality of what the network offers."

Holistic network performance data is also of key importance to mobile virtual network operators and over-the-top players, who may be running apps or other services on mobile networks that drive revenue into operators' pockets. They need this coverage and customer information to monetise their services.

Similarly, a company that has deep knowledge about its capacity and demand is in a better position to wholesale its services to other mobile operators. If mobile operators can demonstrate real-time network coverage with solid data, they will always be in a better position to make a sale.

The same principle applies to big enterprise customers that need to know their mobile service is going to work. "For enterprise customers, it is extremely important that they understand what performance they are getting," notes Breton.

Now, even regulators are getting into the information game. Regulators all over the world have been delivering fines to operators that are not meeting certain performance criteria. Moreover, in some countries, regulators have gone as far as denying



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licenses or limiting operators' ability to sign-up more subscribers.

InfoVista's solutions offer a solution by automatically pairing multi-technology coverage maps with network configurations and network performance data, allowing real-time multi-user access and visualisation of this information. By automating these processes, mobile operators can easily bridge the costly gap between network planning and operations, allowing them to reduce OPEX and promote the sharing of network intelligence, which is critical to ensure a high quality of experience for subscribers and marketing differentiation.

Finally, looking ahead, InfoVista has been anticipating the increasing role of self-organising networks (SON) and, in general, the automation of tasks and processes associated with the management

of network performance.

SON solutions do not set themselves up. They might fix problems such as automatically managing neighbour cell relationships, but they need to be configured so that they can address the most relevant problems in the most efficient way. This requires the intervention of network engineers and extremely good insight into real-time network performance. Mobile operators need to safely transition from current ways of working into a full, closed-loop, dynamic network optimisation process without losing control. The key to this is real-time visibility of network performance in conjunction with proven decision making processes – all of which are core to the InfoVista offering.

InfoVista's SON solution equips operators with this control and provides them with the ability to reduce OPEX related to the management, maintenance and optimisation of today's multi-technology networks. The solution's functionality supports complex 2G, 3G and 4G mobile and radio access network environments, and provides mobile operators with the increasingly important ability to cost-effectively automate the management of their wireless networks.

For more information on the importance of network optimisation automation, an Analysys Mason whitepaper, commissioned by InfoVista, is available for download.