

Operators need to turn their big data into smaller, smarter data in order to deliver the adaptive customer experience users demand

When it comes to data, it's time to think smart, not big

As big data analytics has matured a lot of the discussion has been about how to extract small or usable data insights from the slew of data that operators collect. The sheer scale of big data means irrelevant data has to be excluded from the analytics process in order to generate useful insights in a timely and cost viable manner.

Many in the industry are jumping on the small data bandwagon but Dr. Sameh Yamany, the chief technology officer of Viavi Solutions, says the small data concept is nothing new for operators. "The concept of small data has existed for a long time," he says. "Performance management and customer experience data has always been small data, extracted from packet capture, for example."

Yamany, who is introducing Viavi Solutions, formerly JDSU's test and measurement and optical

security and performance business, to the market following its August launch, says the real change is in the different sources of data now accessible for operators to analyse.

"The more significant change is the evolution of the big data with data coming from sources such as BSS as well as traditional network probes," he explains. "That has opened up the idea of using data to help organisations understand more. Understanding the customer experience isn't as simple as looking into a data packet because there are so many factors that influence the customer experience."

He lists the operating system on the mobile device, the type of radio access network, on-device memory issues and the availability of LTE as just some of the experience affecting issues that operators need to understand. "The experiences people have depend on the size of their screen, their location, the transcoding of video content and many other aspects," he explains. "There are so many aspects to consider that you certainly need some form of big data analytics capability in order to analyse them all."

"Big data is slow and costly so the challenge for operators lies in how to create smart data that allows them to gain insights and make decisions," he adds. "Smart data still relies on big data analytics in real-time but involves predictively choosing what data to analyse. For example, the operator can predict that a specific customer, on a specific device, in a specific location, using a specific service has a heightened likelihood of a particular experience-affecting issue."

The smart data concept therefore short-circuits the longer and larger big data analytics process by narrowing the parameters of what to analyse by taking the information that is already known about the situation into account.

To achieve this, Yamany singles out two key steps operators need to make. "First, they need to create a data culture in their operation," he says. "Data is still being used in a siloed mechanism within the different organisations of an operator. We are not seeing a cross-organisational concept of data culture yet."

That means network data and customer experience operations data are being viewed separately and not sufficiently made accessible to users in other departments. This disconnect

A portrait of Dr. Sameh Yamany, a man with dark hair, wearing a dark suit, white shirt, and patterned tie. He is smiling slightly and has his arms crossed.

Dr. Sameh Yamany: Understanding the customer experience isn't as simple as looking into a data packet

brings Yamany onto the second step, the construction of a big data catalogue.

“The catalogue isn’t going to be a relational database but a catalogue of APIs (application programme interfaces) that can be queried at any time,” he explains. “As the services get more and more into customer hands the catalogue has to be adapted and there are some basic dimensions that operators have to look at.”

Yamany sees the catalogue becoming a guide which will become increasingly vital as operators’ landscapes become more dynamic. “We want operators to be able to look at the big picture so they can even visually see the relationships between a customer watching video and what’s happening on the backhaul network, for example,” he says. “We are looking to provide operators with the visibility to track how these things morph in time which will inevitably increase with the arrival of virtualised networks. You can catalogue millions of dimensions but the trick to getting usable outcomes is to have guided steps towards achieving them.”

Having that guide in place in one of the elements that makes up big data best practice. “Best practice is about building a customer experience workflow that enables you to understand takes account of the value of your services,” says Yamany. “You need to decide which services generate the revenue and what your priorities are and then prioritise activities that impact those services.”

card at extra cost. That has the twin benefits of increasing revenue and can also reduce a lot of network traffic because the video traffic can be handed off onto the operator’s content delivery network (CDN), for example.

“The process has three stages,” says Yamany. “Fix the problem, reduce churn and then make offers to up-sell or cross-sell. One way of monetising our system is to use it to decide where to expand. For example, there’s less value in putting network investment in an area that serves an older aged community so the investment can be directed where it’s needed.”

That location data can be used for applications far beyond simply planning the next phase of network investment. “Location data provides tremendous value in the Internet of Things and connected cars markets, for example,” he adds. “Analysing the data traffic from a lot of location-based applications today enables operators to gain insights into activities such as geofencing. In addition, there are applications such as payment assurance where the location data can be matched with user to ensure they — or at least their mobile device — is present when and where a credit card or other transaction is taking place. Applications like that can reduce a lot of fraud and have obvious value.”

Yamany sees this sort of application and outcome as matching the adaptive nature of the operator

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“When operator staff come to work in the morning they need to get the whole view and then, based on priorities, the next step is to understand the situation,” he adds. “That could involve problems with a service or opportunities that are arising. Following that they can then look at service quality and launch applications to decide what to address or fix next.”

Yamany gives the example of a customer operator in Germany, pointing out that the nation is one of the most protective of users’ privacy. “This is a customer where the privacy regulations have caused systems to change,” he confirms. “We are providing them with insights based on completely anonymised data.”

“We help them understand where underserved customers are,” he adds. “We can identify certain locations that have a bandwidth [availability] issue using anonymous data, not deep packet inspection (DPI). We use our own smart packet inspection technology instead.”

Using this system, the operator can see if there is a lot of video utilisation in that area and take action. That might involve offering users a video-only smart

business now and in the future. “There has been the same mentality about how you manage the customer experience for the last 15 or 20 years, which has been all about looking at the network to predict what the customer is looking at,” he says. “Today, though you have to have a system that is more adaptive to what is really happening in each service and experience. Real-time is the key because the information that exists right now in the network will disappear in a few minutes or seconds, especially in virtualised networks.”

The need to change to customer experience systems that rely on real-time data appears to be well understood. “I’m so happy to see a big shift in the momentum of the market place,” Yamany says. “In terms of service assurance and performance management the approaches being taken now are not siloed. I think 5G is going to be a bigger challenge but I believe putting big data analytics alongside 5G and the deployment of network functions virtualisation is the start of a big shift. Viavi Solutions as a new brand has the experience and products necessary to help operators make that shift effectively.” ■