Bloor
InBrief

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Bloor MUTABLE AWARD 2020 GOLD

guavus a Thales company

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Guavus-IQ

The company

Guavus was founded in 2006 to provide real-time streaming analytics to communications service providers (CSPs), with the addition, subsequently, of machine learning (ML) and artificial intelligence (AI) capabilities to support those analytics. It works with the leading mobile network operators (MNOs) and telcos globally and has offices in the United States, Canada, India, Singapore and Australia. In 2017, Guavus was acquired by Thales Group, the publicly listed French multi-national, with some 80,000 employees. Prior to its acquisition Guavus had itself acquired SQLstream in 2018. From a technical perspective, Guavus offers AL/ML-based analytics from the edge through gateway devices to central processing, with SQLstream positioned as providing the former and the Guavus Reflex platform in the analytics core.

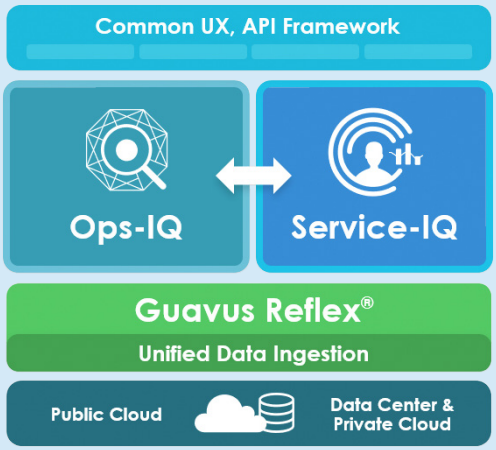

Figure 1 – *The Guavus-IQ portfolio*

Unlike other analytics providers, Guavus has, since its inception, been very focused on providing CSP solutions rather than generic products for any industry. Currently, its offerings include Operational Intelligence, Security Intelligence, Marketing Intelligence, and Smart Industry and IoT solutions amongst others. Guavus' first and largest market has always been in telecommunications and Guavus-IQ builds on the company's existing offerings to provide CSP-tailored solutions for MNOs and telcos.

What is it?

In its first release, the Guavus-IQ portfolio consists of Service-IQ and Ops-IQ, as illustrated in ***Figure 1***. Each of these products has multiple capabilities that are packaged into separate modules. We expect that more solutions will be introduced in due course. As can be seen, they both use the machine learning and artificial intelligence capabilities of the Guavus Reflex platform, which is a streaming analytics platform that leverages Hadoop Distributed File System (HDFS) for big data analytics (based on things such as subscriber details). As shown, Guavus-IQ runs in either private or public clouds, and in hybrid environments.

Briefly, Service-IQ provides real-time subscriber and device behavioural analytics with the goal of helping CSPs to grow revenue, while Ops-IQ provides operational analytics with the aim of improving efficiencies and lowering costs. Ops-IQ is designed to offer automated problem detection, root issue analysis, root cause analysis, remediation, and predictive maintenance capabilities to support network, field and service operations. Both products enable CSPs to deliver better customer experience with elevated network uptime and service availability, as well as higher service quality.

What do they do?

Service-IQ consists of multiple modules: Marketing, Network Analytics, Enterprise IoT, Operations Analytics (integrating with Ops-IQ), and Device Management Analytics. ***Figure 2*** illustrates how these might be presented to MNOs on a departmental or functional basis. Depending on which module is in use, Service-IQ provides a wealth of relevant detail via its interactive dashboards. In the case of the Marketing module, as an example, Service-IQ will provide actionable insights from continuous, accurate, detailed and contextual segmentation of non-cookie network event data, based on device type and configuration, applications executed, websites visited (along with what content was accessed), data service usage and trends, time-of-day, location, and network connection. Examples from other modules include, but are not limited to, product/offer performance, subscriber segmentation (various options), performance of promotions, top-line growth, average revenue per user, performance of partners, customer browsing habits, network capacity utilisation, device and application trends, network availability and performance, IoT device usage anomalies, security

anomalies, root cause analysis (with integration to Ops-IQ) and mean-time-to-repair statistics, and real-time reporting (and trend analysis) against device events. All the Service-IQ modules benefit from its flexible data processing pipeline, which supports many sources (inputs) and many consumers (outputs) to efficiently derive the maximum value from a CSP's network data.

Just as Service-IQ has multiple separate modules, Ops-IQ has distinct capabilities packaged into three modules. The first of these, the Fault Analytics module, which builds upon the

Figure 2 – *Service-IQs multiple modules*

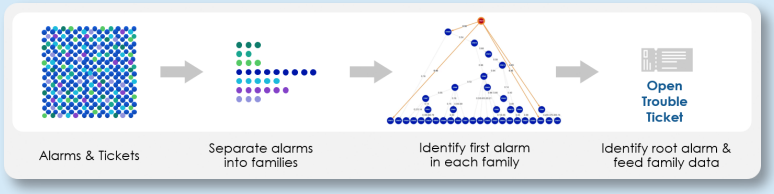

Figure 3 – *Fault Analytics module*

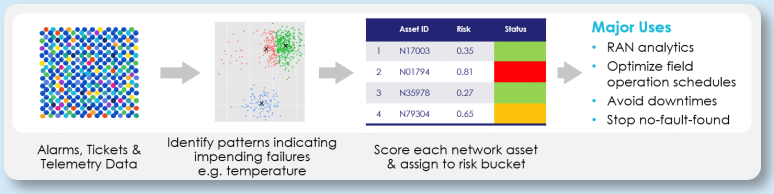

Figure 4 – *Ops-IQ capabilities*

company's previously existing AlarmIQ product offering, provides fault detection and alarm prioritisation/filtering to reduce alarm noise and enable faster fault fixing. This leverages machine learning to separate real from false alarms, prioritizing the former. The software will calculate metrics for the mean time to acknowledge, diagnose and resolve issues.

Also with the Fault Analytics module, Ops-IQ provides network fault localization through root cause analysis and alarm identification. Again, this is based on using in-built machine learning and works as illustrated in ***Figure 3***.

With the addition of the Service Experience Analytics and Customer Experience Analytics modules, Ops-IQ functionality is greatly expanded. Among other things, it identifies degraded services through a combination of anomaly detection, fault correlation and impact analysis with support for fix prioritisation dependent on the impact of the problem; identifies root cause and likely fix, initiating remediation (trouble ticket generation or orchestration), through its multi-domain root cause, likely fix and impact analysis; and identifies impending failures and likely fix for predictive maintenance. In the last case, Ops-IQ capabilities are illustrated in ***Figure 4***.

Why should you care?

There are both technical and commercial reasons why you might care about Guavus-IQ. In both cases, the core point is that Guavus-IQ has been built from the ground up to specifically serve the needs of MNOs and telcos. This is in contrast to other potential solutions based on generic platforms that may have been tweaked with a few features to target this market. The range of features and capabilities offered by Ops-IQ and Service-IQ appear to be comprehensive, which is very different from the many generic analytics vendors who do not have the focus on, and technical depth to support, CSPs.

From a more technical perspective, Guavus-IQ is built on top of a real-time streaming analytics platform that offers cloud-native, carrier-grade performance and scalability, along with resiliency. This should be considered mandatory from any mobile network operator's perspective and will be required to support 5G deployments. We could say the same thing about machine learning and artificial intelligence. Moreover, it is not just that these are good things in and of themselves but also that they offer superior capabilities when compared to alternative approaches. For example, a notable technical feature of Ops-IQ is that it is not rules-based when it comes to alarm identification but, as stated, uses machine learning. The big downside with rules-based systems is that they require continual manual updating as opposed to the automation provided by the use of artificial intelligence.

Finally, by offering pre-built modules that provide productised analytics Guavus-IQ automates the complexity of collecting, processing and analysing data and thereby reduces or removes the need for (expensive) data engineers and scientists. Its context-aware operational (Ops-IQ) and behavioural (Service-IQ) streaming analytics pipelines, with pre-integrated multi-vendor data source, enable this ease of use further.

The Bottom Line

The breadth of capability offered by Guavus-IQ is, as far as we know, unique. Other vendors tend to be more generically and less solutions oriented, Guavus is clearly a leader in providing AI/ML-based analytics solutions for CSPs. If you're an operator, Guavus-IQ is a must-see offering.

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