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openreach

Customer Case Study

BT Openreach Uses Datameer to Improve Operational Efficiency

BT Openreach is the main provider of local-access networks in the United Kingdom. They provide the fiber networks for super-fast broadband that have been rolled out across much of the UK, as well as the copper networks that provide the telephony that most people rely on. BT Openreach supports 26.8 million homes and businesses passed with fiber based services and over 7.7 million homes and businesses are now connected to fibre based services.

As a network wholesaler, BT Openreach works with many different service providers who then provide the onward services to the end customers. There are over 580 communications providers offering services over the BT Openreach network. BT Openreach tends to be responsible for the connectivity from the exchange all the way out to the actual customer's house and responsible for fixing it and identifying issues in that infrastructure.

The organization's stated mission is to build the best possible network with the highest quality of service, and make sure that everyone in Britain can be connected. And BT Openreach continues to invest heavily in fiber and increasing the speeds of the broadband infrastructure, creating a largely super-fast network even when there is an element of copper involved in the final delivery to the customer's house.

"The Datameer platform allowed us to continually remodel our hypotheses and perform iterative analysis that increased our agility."

Tim Midwinter, BT Openreach Data Architect

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Business Challenges

With such an extensive network infrastructure, BT Openreach has challenges in ensuring their lines are working properly as part of the service for their customers. The organization manages more than 158 million kilometers of cable, and they are not stopping there, making super-fast broadband available to thousands more homes and businesses every week.

"We...used Datameer to allow enrichment of the data. To pull out specific patterns both in terms of datasets that are adjacent to each other, but also in terms of time series data"

Tim Midwinter, BT Openreach Data Architect

This also places a tremendous burden on BT Openreach's service organization as well. In a one year period, BT Openreach carried out over 96,400 installation jobs and 85,800 repair jobs per week. That totals 9.5 million jobs in one year and over 37,000 every working day.

The intersection of these two areas — network infrastructure size and high volume of service jobs – presents critical business challenges to BT Openreach:

• Close to 29 million pairs of wires go out to customers' houses carrying telephony and broadband, some of which, due to age, can slowly degrade and need servicing.

• When testing occurs, root problems need to be resolved to the correct part of the network to ensure that engineers are dispatched to the correct place, with the correct tools/spares and having the correct skills so enabling the problem to be quickly and efficiently resolved.

• Speed is of the essence when Identifying problems, as customers and partner service providers won't tolerate lengthy service outages

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Analytic and Data Challenges

As BT Openreach started their analytics journey, they realized they had a tremendous asset at their disposal — a large volume of network and test data. The organization had a solid infrastructure and processes in place to capture these laarge volumes of data.

But data alone would not solve the problem. As BT Openreach looked to optimize how they serviced their extensive network, they saw some interesting challenges from a data and analytics perspective:

- Overnight tests were run on a five-day cycle, which limited the timing of the insights the operational team required,

- The analytics needed to dig deeper to try and identify patterns that were showing suspicious behavior in the exchanges and not the customer lines,

- Reliable operational data pipelines needed to be created for a continuous flow of information to the operational management and network operations teams,

- Due to regulatory requirements, BT Openreach required a strong governance strategy to know who is using the data, what they're using it for, and maintain data separation.

These regulatory requirements created an extra governance and data management challenge for BT Openreach. Although a division of BT, regulatory rules required BT Openreach to operate as an independent organization and wholesaler of services to other communications service providers. This resulted in ensuring that data and analytics that were part of BT Openreach's data lake were 100 percent walled off from the rest of BT.

"We find there's incredibly powerful things we can do within Datameer that allows the end user analysts to really be in control of what they are getting out of the data"

Tim Midwinter, BT Openreach Data Architect

The Datameer Solution

BT Openreach turned to Datameer to solve their unique and challenging operational analytics problems. The resulting solution used best of breed capabilities from the Datameer platform that were integrated seamlessly into their infrastructure solution to deliver rich network service analytics to the BT Openreach operational team.

Through Datameer, BT Openreach was able to:

- Prepare the raw data – test results, inventory data and more – and blend it into datasets that had full context

- Easily enrich data using functions for standard deviations, averages, and more over multiple tests and periods

- Perform time-series analytics with shifting time windows and multiple time points to see if exchanges were improving or degrading over time

- Apply advanced analytics such as clustering to identify patterns within time periods and locations to identify deeper patterns

- Implement fine-grained security and track lineage to ensure proper use and controls of the data within the Datameer platform to meet regulatory needs

The Datameer platform worked directly on their data lake to prepare, enrich, slice-and-dice, and deliver the resulting operational and analytics data to the BT Openreach operations team. The integrated security and governance facilities of the Datameer platform provided the facilities that ensured the fine-grained control of the data for regulatory purposes, while still enabling the data democratization to the operational team that BT Openreach sought.

The resulting solution used best of breed capabilities from Datameer that was integrated into a seamless solution to deliver rich network service analytics to the BT Openreach operational team.

Results

With the Datameer platform, BT Openreach was able to achieve the following results:

- Rapid prototyping to identify key patterns that led to failure modes within problem equipment, and the ability to quickly remodel hypotheses

- Process data daily in 30 minutes for operational analyses, then run weekly analytics for time series analytics that span many months to look at long term patterns

- Effectively manage complex analytic functions and operations with many different interdependencies

- Deliver new multifaceted analytics that explore results over multiple tests and can cluster issues by time and location

- The ability to use location information about where problems are in the exchange to identify more granular service details

- Operationalization of resulting analytic data pipelines to deliver fresh, consistent results to the operations team for both management decisions and service team drill down

- Integrated fine-grained security and governance to ensure regulatory compliance and proper use of data

Improvements at a Glance

Faster Analysis

Results: Agile prototyping and hypothesis testing

Benefits: Rapid delivery of new analytics to operations teams

Deeper Analytics

Results: Easy analytic enrichment and pattern finding

Benefits: Analytic data that enabled operations teams to drill deeper into problems

Security & Governance

Results: Fine-grained security controls and end-to-end governance

Benefits: Met security requirements

About Datameer

Datameer is a leading provider of data management software for analytics that gives analysts universal access to the data they need when they need it for faster analytics. Datameer Spectrum is a cloud-native, fully-featured ETL++ platform that enables easy, code-free creation of data pipelines on a platform that delivers elastic scalability and enterprise-grade security and governance. Datameer is a trusted platform at leading enterprises globally, including Citibank, Royal Bank of Canada, British Telecom, Aetna, Optum, National Instruments, Vivint and more. To learn more, please visit www.datameer.com.