



How One Company Improved its Root Cause Analysis for Field Services

LEADING CABLE OPERATOR DISCOVERS THE POWER OF QEYMETRICS

Defining the Challenge

Often, Line Technicians at leading cable companies must go on the customer's property to address an issue. When one of the leading cable providers' Line Technicians reported that expected problems were no longer occurring while at the site, the cable company knew it needed to investigate.

Cable providers understand that there are a multitude of issues that reoccur. They know it wastes precious time and money to send a technician if the problem does not appear while they are on site. Problems such as pixilation and missing channel issues are particularly frustrating for both the customer and cable operator because they tend to be unpredictable and intermittent.

Over time, customers will report a problem when it starts and stop calling when it goes away. However, this means that the problem is never resolved, making it difficult to analyze and pinpoint the cause. In this scenario, the Line Technician contacted the supervisor, reporting that the locations he was visiting were in the same area. While this provides a geographic range for the issue, there were still approximately 50 nodes in the hub. However, investigating each node within the hub would take too much time.

With no other obvious choices, the cable operator decided to submit an ad hoc request to IT to begin their trend analysis using call data. Unfortunately, their IT teams were understaffed and overtasked: This request would take days or weeks to be processed. As well, the output format would not be in user-friendly, thus requiring more help to manipulate the data.

CABLE FIRM'S FIELD TECHNICIANS ABLE TO STOP THE GUESSING GAME

PROFILE

INDUSTRY: Cable - MSO

KEY BUSINESS PROCESSES

- Field Operations
- Complete and Pending WO Tracking
- Automating Coaching Reports
- Repeat WOs by Technician
- Trending of Outages at Node/Hub

$$\sum J_{ij} \beta_j \quad y = \begin{bmatrix} y_1 \\ y_2 \\ \vdots \\ y_n \end{bmatrix} \quad x = \begin{bmatrix} x_1 \\ x_2 \\ \vdots \\ x_n \end{bmatrix} = \begin{bmatrix} x_{11} & \dots & x_{1p} \\ x_{21} & \dots & x_{2p} \\ \vdots & \ddots & \vdots \\ x_{n1} & \dots & x_{np} \end{bmatrix} \quad \frac{1 - \text{supp}(y)}{1 - \text{conf}(x \Rightarrow y)}$$

$$\text{conf}(x \Rightarrow y) = \text{supp}(x \cup y) / \text{supp}(x)$$

$$\text{lift}(x \Rightarrow y) = \frac{\text{supp}(x \cup y)}{\text{supp}(x) \times \text{supp}(y)}$$

$$x_j \in S_i$$

$$y_i = \beta_1 x_{i1} + \dots + \beta_p$$

$$y = x\beta + \epsilon$$

$$P\left[\frac{a_i}{\text{conc.sig}}\right]$$

$$S_i^{(1)} = \{x_p : \|x_p - m_i^{(1)}\|$$

$$x_i p + \epsilon_i = x_i T \beta + \epsilon_i$$

$$\beta \begin{pmatrix} \beta_1 \\ \vdots \\ \beta_p \end{pmatrix} \epsilon = \begin{pmatrix} \epsilon_1 \\ \epsilon_2 \\ \vdots \\ \epsilon_n \end{pmatrix} \quad \sum_{i=1}^n$$

$$\epsilon \frac{\% \Delta Q}{\% \Delta P} = \frac{\partial Q}{\partial Q}$$

$$\approx f^0 + t(x, \beta)$$

$$P\left[\frac{a_i}{\text{conc.sig}}\right]$$

$$J_{ij} = \frac{\partial f(x, \beta)}{\partial \beta_j}$$

$$\arg \min_S$$



Without QeyMetrics, it would have taken HOURS of our team's time over the course of weeks to 'hopefully' identify the problem node. With QeyMetrics we had the information needed to solve the problem in less than 10 minutes.

We had plenty of existing reports, however, to dive deeper into those metrics, we would have to submit a request for a new report and wait. With QeyMetrics, we don't have to wait and we can dive down into the detail to find the information that we are looking for."

DIRECTOR OF OPERATIONS

Discovering a Solution

Luckily, a Field Operations Manager knew about QeyMetrics, the performance management solution he had been using to manage his team's data. QeyMetrics consolidated closed and pending work order data and provided an unprecedented amount of navigational analysis, reporting depth to the management teams. The Field Operations Manager showed his co-workers how to log and analyze data in minutes.

Within no time, QeyMetrics was able to pull 90 days of detailed historical data of all service calls for the leading cable operator. The solution allowed the team to filter the data by geographic region, see all service calls against the suspected hub, drill down to a specific time frame and identify call issues from each individual node. Of the approximately 50 nodes associated with that hub, one node reported seven times as many service calls as the rest of the nodes over the past 90 days. In ten minutes, the team found the problem node and exported the data report to the Line Technicians.

The Manager of Technical Operations explains, "By running this report, the plant staff was able to see where all of the service calls came in during a period of time in order to quickly identify that the problem was happening in one area of a specific node. The line team went out to that node, and identified the problem. A few strands of bad feeder and a bad DC was replaced to resolve the issue.





Anticipating the Next Steps

Since then, the management team has taken the QeyMetrics solution to the next level. They were so pleased with the visibility of the metrics provided at the technician and work order level that they applied the platform to the company's outage data as well. Once the outage data was presented, configured and loaded into QeyMetrics, solutions to their issues were identified in a matter of days. They now have a way to historically track and trend outages across their system. This data is now being used by analysts from the dispatch teams in order to trend hub and node outages. In this manner, they can work with the plant and line teams to get a jump start on fixing intermittent issues before they spread to other customers.

Additionally, QeyMetrics makes creating other powerful metrics easy. The manager of the dispatch team wanted to gauge performance and track the number of minutes until an outage was cleared. "Since we had the trigger date and clear date of the outages in our systems, creating this metric in QeyMetrics was easy."

Not only was this metric created with a few clicks, it was immediately available going forward and retroactively as far back as they had data loaded into the solution. The plant and line teams now have a way to not only trend outages by hub and node, but also identify the cause and gauge their performance in clearing those outages.