Henry Ford Health System Goes Beyond Traditional Call Accounting with Traffic Analyst Call Forensics Deployment

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EXECUTIVE SUMMARY

CUSTOMER PROFILE

Customer: Henry Ford Health System

Industry: Healthcare

Website: www.henryford.com

Mission: To improve people's lives through excellence in the science and art of health care and healing

BUSINESS CHALLENGE

- Tracing calls for threatening call identification, rogue fax servers, etc.
- Network performance & utilization trending
- Dropped call analysis
- Quality of Service (QoS) analytics
- Respond to legal requests

SOLUTION

Traffic Analyst Call Forensics

BUSINESS RESULTS

- Reduced effort for root cause analysis
- Reduced cost of additional system capacity by reclaiming existing ports and licenses
- Elimination of service problem blind spots

BACKGROUND

Founded in 1915 by auto pioneer Henry Ford and now one of the nation's leading health care providers, Henry Ford Health System (HFHS) is a not-for-profit corporation. It is comprised of hospitals, medical centers and one of the nation's largest group practices, the Henry Ford Medical Group, which includes more than 1,200 physicians practicing in over 40 specialties. The System's flagship, Henry Ford Hospital in Detroit, is a Level 1 Trauma Center recognized for clinical excellence in cardiology, cardiovascular surgery, neurology and neurosurgery, orthopedics, sports medicine, multi-organ transplants and cancer treatment.

With more than 23,000 employees, HFHS is the fifth-largest employer in metro Detroit, and amongst the most diverse. Generating more than $1.7 billion of annual economic stimulus, it proudly acts as one of Michigan's anchor institutions.

REQUIREMENTS BEYOND TRADITIONAL CALL ACCOUNTING

Call accounting applications collect raw call detail records from communications systems and provide an interface for creating reports. And, for many years the driver for such systems was cost reduction. However, HFHS needed to go beyond usage and costing reports. They needed a forensics tool to support a wide variety of operational support functions throughout a disparate voice network including a Unify OpenScape Voice platform, eleven Unify HiPath 4000s (plus 60+ IPDA access points) and a Nortel CS1000. They deployed Traffic Analyst Call Forensics in a Subscription model so they could benefit from the security of an onsite implementation but leverage the financial flexibility of a multi-year contract to fit their opex budget.

"Traffic Analyst is all about taking the bits and pieces of CDR data to build the bigger picture of what is happening in our enterprise."

Call Tracing in a Mega Network

Given the size and complexity of the HFHS network, calls that enter the network will traverse multiple switches and generate multiple call segments per call. For example, a patient calling to make an appointment will generate an average of 15 call segments per call. With 175,000+ calls/day, HFHS Voice IT Services team

relies on Traffic Analyst to overcome the complexity and magnitude of data to pinpoint specific call events by leveraging key system features including:

- Tracing calls as they traverse through multiple switches and are transferred inside a switch and tying all call segments together in query results and reports
- Flexibility to select one or many switches for any report
- Comprehensive list of reporting fields not available in other solutions, providing extensive search capabilities to filter, sort, group and drill down into the data
- Simplicity and ease-of-use of the interface

"Traffic Analyst gives us pinpoint accuracy in tracing calls throughout our network. We no longer need to dig through raw CDR records. We can efficiently distill vast amounts of data into the precise information we need with a single screen."

In the case of a threatening or harassing call, a quick on-demand query filtered on extension and time range provides all the details of the call and how it was routed through the network. In many cases, the site where the call is answered is not where it entered the system, so without Traffic Analyst's single report query across the enterprise, HFHS may be delayed or not be able to track down the originating number.

At times, a citizen contacts the help desk to complain because a fax machine is mistakenly calling their phone every few moments. Again, a quick query with the phone number promptly provides the extension of the rogue fax server and also highlights how many times the caller was bothered with a fax attempt. HFHS staff does not have to spend time tediously treading through raw CDR files. The answer is a few clicks away in a web interface.

Due to an excessive number of telemarketing spam calls, a clinic's phone lines may become blocked. In addition to identifying the originating number of the calls so it can be blocked, Traffic Analyst can quickly provide information if that calling number has attempted to call other locations throughout the health system.

Recently, a customer complained that he was routed to a "we are closed" message announcement during the day. Thinking this should be an impossible call flow, HFHS staff dug into the detailed call segments within Traffic Analyst. By investigating each step in the routing, they uncovered a typo in the forwarding number within the logic.

Traffic Analyst also played a role in improving customer experience by discovering that complaints of unanswered calls during early morning hours were due to phones still being forwarded to voicemail system. Investigation of the call segments highlighted that the inbound calls "almost didn't have time to even ring at the desk" because of forwarding. Mystery solved and customers' calls are answered!

Finally, HFHS has police authority located within many of their facilities and employees are instructed to dial an internal emergency number. So, when a 911 call is placed to external emergency agency, HFHS needs to be able to trace the call back to the caller to determine if the call was placed accidentally by an employee or potentially by a patient or visitor.

Outside the Box

Beyond traditional applications for call accounting solutions, HFHS leverages the deep forensics of Traffic Analyst for several "outside the box" applications.

HFHS uses the "Most Frequently Called Numbers" report not simply to validate call volumes and trends, but to optimize on-net routing. By examining the report, they can quickly identify if there is a routing problem or if callers are dialing 10-digit numbers that route over PSTN instead of on-net 6-digit numbers. They can then reeducate the callers on preferred dialing schemes or choose to update the switch to automatically route the 10-digit number to on-net number.

With a large distributed network, HFHS can be in the situation where they are getting low on ports at a site. By leveraging the "No Activity" report, they quickly discover devices that can be removed to recover capacity. Or, if they are making changes at a site, they can see if stations have been abandoned or have little to no activity. This allows for reclaiming ports and licenses and avoiding the cost of additional system capacity.

Would you think to use your call accounting solution for monitoring your IVR performance? That is exactly what HFHS does. By creating column charts for usage on IVRs, they can quickly understand the channel activity. Referred to as the "Enterprise Skyline" (as shown below), an analyst quickly recognizes any abnormalities in the pattern. For example, if an IVR has twelve channels with linear routing and only the first eight channels have traffic, capacity is fine. However, if there is traffic on all twelve channels, they may choose to add additional

Enterprise Skyline View for IVR Channel Usage
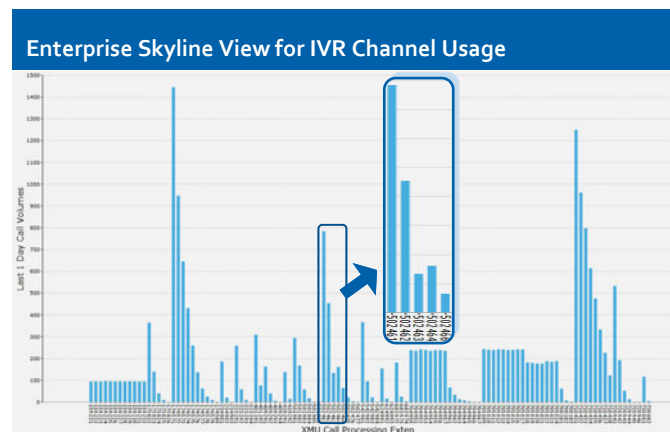
capacity. Or, if they spot a "distorted ski slope" pattern, as highlighted in graphic, where channel three has less traffic than channel four, this could indicate a bad channel that needs to be reset or requires further evaluation.

In another example, HFHS deployed an IVR so staff and patients can "self service" to contact an employee instead of talking to a live operator. With a "round robin" algorithm for IVR, this channel activity chart should show all channels with approximately equal usage. If not, they know to investigate an issue. Further. HFHS reviews the call duration for these calls. With expected average duration of 30-40 seconds, if the call durations are much longer or shorter, they can research if there is a system problem.

QoS & More

With the rollout of VoIP devices throughout the enterprise, new challenges arose. Traffic Analyst provided visibility into metrics such as MOS, R-Factor, jitter, latency and packet loss for their phones and gateway cards. HFHS IT Voice Services could quickly pinpoint any devices with poor performances before users started to call with complaints.

Beyond the basic QoS metrics, Traffic Analyst provides insight into dropped calls. This allows the staff to provide root cause analysis and impact assessment to their executive team. For instance, when a gateway failed, a quick report of abnormally terminated calls for the switch provided insight into the number of calls that were dropped. Traffic Analyst also provided information on how other calls were rerouted during failure. Further, if a customer complains of dropped calls, HFHS can quickly validate the drops and research the source of the problem.

SUMMARY

The Traffic Analyst deployment is a true partnership between HFHS and Impact Technologies. HFHS has a valuable tool to support daily operations and investigate a wide range of topics and problems. Impact receives strategic feedback from a prominent customer that has been capitalized to enhance Traffic Analyst giving HFHS a tool honed to their specific needs and workflows.

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