Network Operator Quality Improvement Trends

Using QuEST Forum Benchmarking Capabilities

The information and communications technologies industry (ICT) is expanding at a very rapid rate while also adapting to emerging technologies and globalizing to become the center of the technology revolution. With the world's largest and most innovative service providers/network operators in direct competition to provide high-speed connections through telephone lines, cable, wireless or satellite, the quality and reliability of these networks and the supply lines to build and support them is a strategic differentiator.

Customers look to their service providers to fulfill the promises of new technologies and applications, which in turn, challenges the companies to continually improve the performance of the network and the products that support it. QuEST Forum, an ICT industry association comprised of collaborating service providers and suppliers, is addressing this challenge on many fronts, one of which is the Network and Service Reliability Strategic Initiative. This initiative utilizes the secure framework of the TL 9000 Quality Management System (QMS) to establish a unique and flexible benchmarking model. It allows participating companies to define new relevant measures, submit monthly performance data anonymously and use the consolidated results to improve their performance.

The Network and Service Reliability Strategic Initiative has measurably helped to improve the performance of the participating companies. Since they anonymously input their data monthly into the secure repository, they are able to use the output as a benchmarking tool to track their performance and identify areas for improvement. This paper highlights one of the many measures the Network and Service Reliability Strategic Initiative has developed.

Global Service Impact (GSI)

Global Service Impact (GSI) measures service performance from a customer perspective as delivered by the service providers/network operators. Simply put, GSI measures the unavailable minutes per million minutes of use, based on specific outage criteria and counting rules. GSI is used to measure the reliability of voice, video, E911, wireless and high speed internet services.

Benchmarking Enables the Evolution of QuEST Forum & TL 9000

The initial focus of QuEST Forum and TL 9000 in the late 1990s was to improve the quality of suppliers that provided telecommunications equipment to network operators. As a result, the TL 9000 measurements developed in the following decade focused on supplier quality and less so on operator service quality. As TL 9000 became more pervasive globally and network operators reaped the benefits from their TL 9000 certified suppliers, network operators also became interested in TL 9000 certification and network operator oriented measurements.

The advent of the Network and Service Reliability Strategic Initiative was a key step in the evolution of TL 9000, which was originally a supplier centric standard, to a more truly end-to-end standard including the quality experienced by the end-users of ICT services. The success of this initiative would not have been possible without the use of the QuEST Forum benchmarking process and tools to help define and validate operator service oriented measures, such as the GSI measurement.

In fact, based on the success of these benchmark studies, GSI and a related measure called Mean Time to Restore Service, which is not discussed in this study, are included in the recent TL 9000 Measurements Handbook R5.0, effective at the beginning of 2013. These and future network operator oriented measures will increase the appeal of TL 9000 to service providers globally and all segments such as cable, satellite, and cloud.

The goal is that when additional operators become certified, benchmarking studies like the one for GSI will no longer be needed since the certified operators will have access to a wealth of TL 9000 performance data that they can use to continually drive improvement just as numerous suppliers have over the last decade.

GSI data input is gathered from the service provider's/network operator's standard network data and incident management processes and focuses on critical disruptions only. GSI provides the unavailability of the network, whereas the TL 9000 System Outage measurements provide the availability of the network. By using the inverse, GSI performance changes provide far more visibility without having to expand to seven or eight decimal points. In comparison, the traditional view of reporting to five nines (0.99999) availability equates to reporting GSI equaling ten minutes.
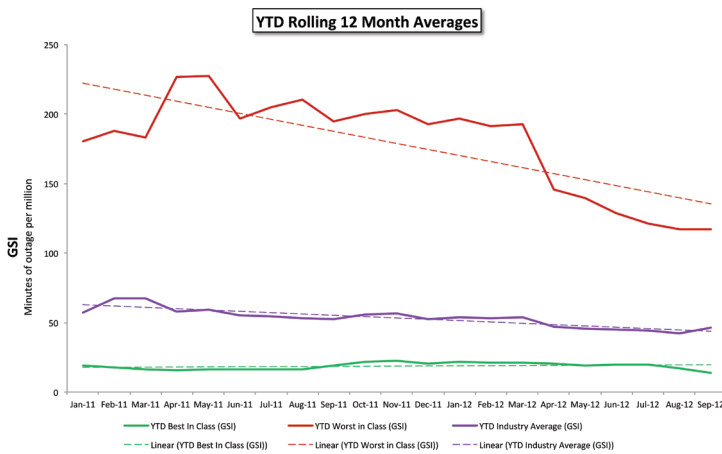

Figure 1 Product Category: 9.1 GSI Voice

Figure 1 shows the GSI results for voice services from January 2011 to September 2012 and includes data from several of the largest service providers/ network operators in North America and Europe.

All events are included even if the outage causes are external to the equipment being measured. Unlike other TL 9000 measures, GSI includes catastrophic and major weather events. The graph shows the twelve-month rolling averages and trend lines for Best In Class (BIC), Industry Average and Worst In Class (WIC) for GSI.

Figure 1 identifies a major improvement trend for Worst In Class from 218 minutes to 145 minutes which is a 33% improvement. Graphically, it is much easier to view the improvement with GSI rather than availability because the trends show more variability.

The Industry Average also improved from 61 minutes to 45 minutes for a 26% improvement. While the absolute change is not as large as WIC, the percent change is still significant.

The Best In Class trend was steady around 18 minutes which is close to the typical .99999 (5 9s) availability objective. In key services, such as financial or emergency services, these GSI performance results can have significant financial and safety impact.
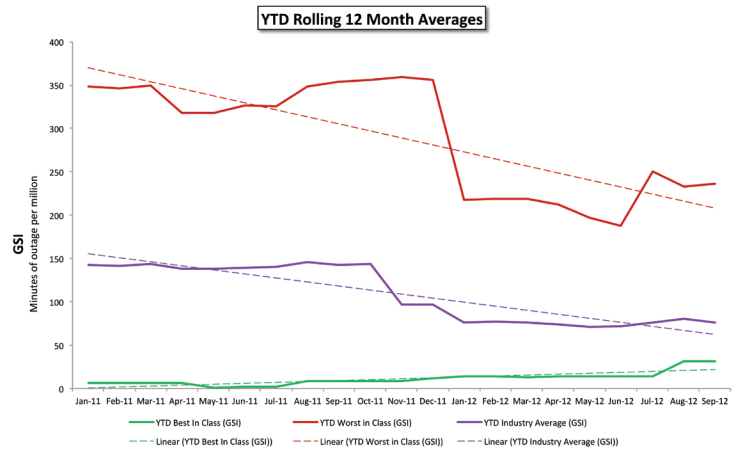

Figure 2 GSI Product Category: 9.5 Internet Access

Figure 2 also provides data from January 2011 to September 2012. It shows Product Category 9.5 Internet Access twelve-month rolling average GSI performance and trend lines for Best In Class (BIC), Industry Average and Worst In Class (WIC). The graph demonstrates a major improvement trend in Worst In Class from 366 minutes to 208 minutes for a 43% improvement. The Industry Average also decreased from 154 minutes to 64 minutes for a 58% improvement.

Figure 2 shows that while the GSI Internet Access Industry Average absolute change was not as large as WIC, the percent change was higher. The Best In Class moved slightly up to approximately 18 minutes, which is well below the Industry Average of 64 minutes. For 9.5 Internet Access, the WIC and BIC gap was much greater than 9.1 Voice. As internet usage and outage impact is becoming more important, the gap of WIC compared to BIC is narrowing over time compared to 9.1 Voice.

Conclusion

The Network and Service Reliability Strategic Initiative, using QuEST Forum's benchmarking platform and TL 9000 measurement framework, is making a substantial difference in end user performance and participants are seeing a competitive advantage. The success of the

benchmark study has resulted in QuEST Forum approving the incorporation of the GSI measurement into R5.0 version of the TL 9000 Measurements Handbook.

While product categories for service providers always existed, TL 9000 measurements were initially focused on suppliers. With the GSI measurement, service providers are now able to benchmark downtime and provide more useful measurements for improvement.

One of the fundamental drivers for the formation of QuEST Forum and the creation of the TL 9000 Quality Management System was the industry's need to objectively measure quality performance. When a competitive industry, such as ICT, has reliable benchmark data for comparable products, the participants strive to differentiate themselves resulting in an accelerated improvement loop. Many of the network operator companies participating in the Network and Service Reliability benchmarking study have recognized the value of TL 9000 and have either certified their operations or are in the process of certifying to TL 9000. With the availability data as well as other benchmarked data, TL 9000 certified companies have a competitive advantage over other companies and are better positioned to capture anticipated industry growth.

The data presented shows that participating companies have made noticeable improvement in service performance for the availability of services. For a network operator, the benchmark data not only provides the company with a report card on its improvement progress, it also provides objective industry performance results that are not easily obtained by their non-participating competition.

This report was compiled using the data from participating companies. While the team surmises that the overall industry has improved, the data only substantiates that the participating companies using the benchmarking data have improved. Regardless, being able to provide objective evidence of substantive quality improvement during a period where service providers were forced to aggressively expand their networks while trying to reduce their costs underscores the value of benchmarking, QuEST Forum and TL 9000. As customers become more aware of the improvements driven by TL 9000, it is expected they will seek to purchase products and services only from TL 9000 certified organizations.

How does your company measure up?

In today's competitive Information and Communications Technology (ICT) environment, there is a continuing emphasis on delivering exceptional service while keeping costs down. ICT network operators worldwide are challenged to deliver innovative, high quality services during a time of rapidly changing customer needs and expectations coupled with continuing downward cost pressures.

Network operators are going to great lengths to create new services, reduce lead times, improve network availability and enhance the quality of service. They routinely monitor, collect and analyze metrics associated with their own internal operations, processes and work activities in order to monitor performance and improvement in their networks. While this internal data is invaluable, the question of "How do we measure up against our competitors?" remains unanswered.

In order for an organization to be able to answer this question, they must compare themselves to similar organizations within the industry. Traditionally, this comparison would be accomplished through an independent third party consultant who would conduct a study costing thousands of dollars. The consultant would determine the measures to be examined and gather data from the organization and similar organizations within the industry.

However, this method leaves many questions unanswered. How does the organization know how the comparative data was collected? How does the organization know how many organizations they were compared against? What is the identity of the participants? Can the organization provide the data requested by the study for the prescribed study period? Could there be measures for which data is unavailable? Are all the participants interpreting the measure description (numerator, denominator, calculation) and counting rules the same or are there variations and discrepancies?

Based on the results of the study, the organization might identify areas for improvement. The organization would then launch an improvement/transformation project to strengthen the weak areas. Depending on the project or type of improvement, an organization could invest up to a year and hundreds of thousands of dollars to meet or exceed its peers. Additionally, while the organization made improvements to better its ranking in the study, similar organizations in the industry also continued to improve their position and therefore raised the bar for everyone. Consequently, since this type of study only addresses a specific point in time, an organization is forced to continually invest in study participation and improvement.

What if an organization could engage in a study, on an ongoing basis, with its competitors using standard measurements and counting rules, which would be determined by the participants working together as a team? The data would be gathered monthly, placed into a secure database and used to compile statistics showing Best In Class, Worst In Class and Industry Average performance. Using these measures, an organization's data would be plotted and its position would only be known to them. The participating companies know where they stand, expect to see improvement in the weaker areas and continued improvement in stronger areas.

QuEST Forum has established the Network and Service Reliability Strategic Initiative specifically for global network operators that want to use the data they routinely collect to improve their own performance and compare themselves to their competing organizations. Today, network operators around the world are active in this study. The participating organizations have developed several measurements they are reporting on and have a roadmap to continue adding measures that not only provide data on the performance of the network but also monitor the customer experience. Areas of continuing development include Change Management and DNS performance.

Any service provider can join the study since participation does not require membership in QuEST Forum. The team meets via teleconference and face-to-face three to four times a year. Participation in these meetings by a subject matter expert (SME) is required, along with the gathering and submission of monthly data. While the counting rules are established for the active measurements, new participants will be part of the team that sets the rules for the additional measurements in the roadmap.

For information on the Network and Service Reliability Strategic Initiative or how to participate, please contact QuEST Forum at information@questforum.org or +1-972-423-7360.

For information on QuEST Forum or TL 9000, please visit www.questforum.org or call +1-972-423-7360.