

Learn From A Real User

INTRODUCTION:

6 Feb 2023 - Türkiye Earthquake

On Monday, Feb. 6, 2023 at 4:17 a.m. local time an earthquake of 7.8 magnitude struck south central of Türkiye. This earthquake was followed by a second earthquake of magnitude 7.5 with the epicenter of Elbistan City. There was widespread damage in a huge area of nearly 38,600 square miles. In a crisis of this magnitude, communication is crucial as it is a life saving factor and depends on the service continuity.

Service outages were unavoidable as seismic wave motions affected fibers and even broke them down. It hit an area, covering 15.6% of the population, where CSP's fibers, base stations were located, putting coverage area in jeopardy. At that moment, all service providers suffered from service interruption. Due to harsh human conditions, it was tough to intervene in breaks and damages. They required to know how many services, customers were impacted and how they prioritized remediation of service impacting problems. However, CSP handled full system recovery and resolved connectivity, traffic and capacity issues of their network in the shortest time possible through Star Suite t0 - t1 report and root cause analysis.



About the Communication Service Provider

One of the three major communications service providers in Türkiye offers its customers voice, data, TV and value-added consumer and enterprise services in mobile and fixed networks. It has 40 million+ subscribers with a 55% market share.



THE CHALLENGE

In such catastrophic events, the number of the alarms reaches significant levels.

"While under normal circumstances, an average of 70 alarms occurred per minute, after the first earthquake, the number of alarms reached 16480 within 2 minutes, followed by an average of 250 alarms every minute. Again, under normal circumstances, an average of 102 fiber and 583 trail interruptions were observed throughout the day. However, just after the first earthquake, 70 fiber and 604 trail interruptions were observed within 2 minutes."

With the number of alarms increasing that much, the umbrella management system could not handle that much alarm load and overlooking was quite possible. It was a big challenge to determine which alarms had already existed in t0 and the ones that occurred after the earthquake (t1).

Every second delayed after the earthquake is vital and directly affects human life, so delays must be eliminated. Even if the alarms were processed without any delay, it required huge effort and time to see the difference between two periods (t0 and t1). There should have been a much more effective way of seeing the big picture in order to respond quickly. This can only be achieved by identifying the exact points, underlying issues and possible affected services and customers.



THE SOLUTION

Helping service providers to reveal the impact of disaster in seconds

Star Suite t0 - t1 reports are specially designed to address complex networking problems that occurred just after the natural phenomenon, besides proved invaluable in service ensuring in the emergency case. At a critical time, when all the service providers have difficulty in pinpointing pain points, t0 - t1 reports played an important role.

The unique approach of t0 - t1 reports based on root cause analysis of Star Suite service assurance platform. Triple correlation between network topology, alarms and performance across all layers and domains is the fundamental for troubleshooting.

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Fewer than minutes after the earthquake struck, the system automatically notified NOC teams, operation teams, planning teams, and concerned partners. Based on this information, operation teams were able to prioritize networks with the greatest impact on trails and reroute services to alternative ways if possible. Once notified, field operation teams were deployed at the most critical sites and initiated a fix to restore the services.

A set of intuitive reports are automatically generated within a minute, reducing operational overload and saving time. These reports encompass both physical and logical layers of the entire network.

Fiber / trail outage report

Fiber attenuation report

Region based fiber outage report

Segment (enterprise, backbone) based trail outage report

There are many reports available on the UI yet, sometimes admins may need reports for a particular time or data. As flexible options are offered, users can simply generate custom reports that align with their specific preferences. Once scheduled, reports can be generated for any interval (weekly, monthly, etc.)

THE RESULTS

CSP provided a positive experience to their customers and increased their corporate image.

- Star Suite service assurance platform received thousands of alarms and eliminated 99.21% of them by root cause analysis. As issue resources were simply determined, it helped in reducing mean-time-to-identify network problems.
- CSP achieved 30% faster recovery in the earthquake-affected areas than other operators did.
- Proactive notifications informed NOC, operation, field teams and triggered automated work orders leading to fixing network issues just after the earthquake.
- Field maintenance teams and resources were immediately directed to the affected sites. Thus, 80% faster response was achieved and maintenance cost of wrong / unnecessary intervention decreased by 95%.
- It is expected that the services in affected areas to be renewed will be planned more efficiently, reducing the CAPEX cost by 5%.



About TechNarts

TechNarts has been a leading software development company since 2007 to make a difference in the sector with its innovation-oriented approach, particular staff training and extensive know-how. With 15+ years of experience in mastering cutting-edge technologies and proven methodologies, it has been offering tailor-made software solutions and services to enterprises with an endless job enthusiasm. TechNarts has a deep expertise in track & trace systems plus OSS/BSS. From telecommunications to health informatics and fintech, covering a wide range of solutions in various sectors, we build unique solutions that matter.