spearline®

WHITEPAPER

Beyond network monitoring

An investigation into how number testing identifies customer-impacting network issues in real-time.

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> Is your business a global enterprise with a complex set of contact centres? You can have complex systems in place to monitor your telecom networks. Do you know if there is a blindspot with your numbers?

Is your business a global enterprise with a complex set of contact centers? You can have systems in place to monitor your telecom networks, but do you know if there is a blindspot with your numbers.

If you're only monitoring your network, any number of customer-impacting issues can arise. As research shows that only 4% of customers complain, how will you know about these issues? 96% of customers won't communicate their dissatisfaction or may switch their business to another provider.

In today's switching economy, 64% of customers switched providers due to poor service[2].

What can you tell by monitoring your network?

Monitoring your network can provide assurance that:

- MPLS services are connecting
- All endpoints are reachable
- There is network performance data for throughput

And provide data on:

- Error rates
- Bandwidth, packet loss, latency and jitter
- Downtime/uptime
- Use-time percentages

> "Only 4% of customers complain. The other 96% won't communicate their dissatisfaction."

Network Monitoring

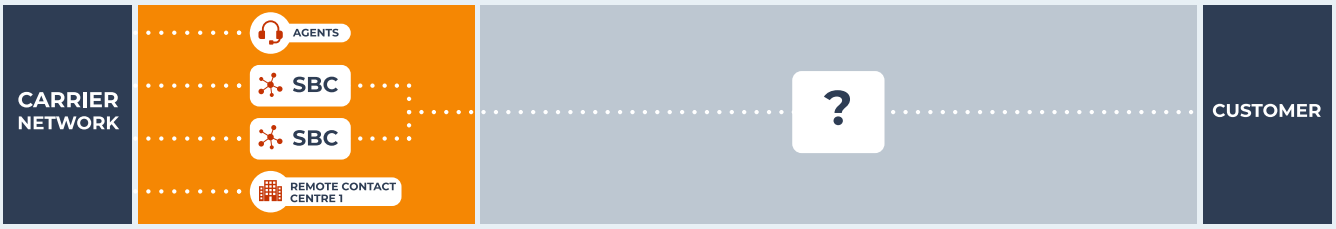


Diagram 1: Network monitoring alone leaves a blind spot on the route between your customer and you. It gives no visibility of the grayed-out area above.

1. 1st Financial Training Services
2. Accenture Global consumer pulse research

The reality: 1 in 25 calls fail, despite network monitoring

However useful network monitoring may be internally, the reality is that it won't detect any of the issues that can occur on the external network. We've conducted millions test calls globally, using in-country servers and phone lines that replicate customers' experiences from wherever they are. This gives us a wealth of data on the size of the issue.

Over those millions of tests, we've found that 1 in 25 calls fail to connect, or suffer critical customer-impacting audio quality, DTMF or IVR (touch tone) failures.

> "1 in 25 calls fail to connect, or suffer other critical failures."

What network monitoring can't tell you

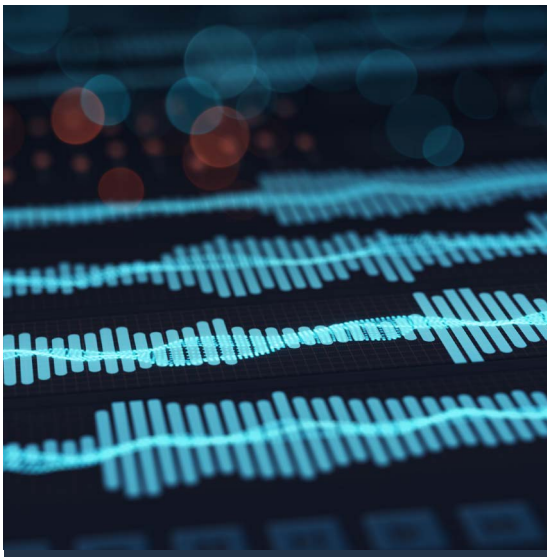
No matter how sophisticated your network monitoring systems are, they won't alert you to issues happening outside your network:

- Intermittent or total toll free number outages
- DTMF failures
- Incorrect carrier routing
- Audio quality issues (silence, one way audio, noise/interference)
- Transcoding
- DTMF failure
- Post dial delay (PDD)

If you're only monitoring your network, and not your numbers, then you have no line of sight through to your customer - you're in the dark about their end-to-end experience with you. With no idea what is happening outside your network, numbers could be failing, or a drop in quality outside your network will impact the audio quality on your lines.

Tens of thousands of network tests are carried out per day by Spearline globally. These tests are performed for many customers, terminating to different countries across several carriers. This gives customers vast amounts of data to monitor their own infrastructure.

The internal monitoring metric is constantly monitoring the PESQ scores that are returned on all of their routes. A ticket will be automatically generated if there is any decrease in quality. When a problem is suspected on the Spearline network, testing is immediately halted in the affected country and alerts are stopped in case they are misleading.



Audio quality codecs

Audio quality is very similar to the quality of images or video. If you want to send an image or video, you can downgrade the quality to take up less data. Once downgraded, you can't get that higher resolution image back.

Similarly, carriers can downgrade the quality of your audio to save bandwidth. Your network may be set up for the highest quality codecs such as G711 or G722. But, if any one of the carriers operating the path from your customer to you uses a lower quality codec, the premium network codecs you're paying for are redundant. Low quality audio coming in to a high quality network will still be low audio quality.

What can you tell by testing your numbers?

By testing connectivity and audio quality before and after it reaches your domain network, you will have clear sight of your customers' experience.

In-country servers place automatic calls in to your local number. This checks that all your numbers globally are connecting. The call is also recorded to give an objective measure of audio quality.

The two most popular Spearline tests are the connection test and the audio quality test. Spearline covers a range of telecoms testing solutions, such as latency, agent response time and conference dial-out, amongst many others.

> "A drop in quality outside your network could be impacting the audio quality on your lines."

The Spearline Platform currently has the capacity to run hundreds of thousands of tests per day. We have a roadmap to expand this capacity fivefold to meet international demand for the product.

The lines we are monitoring are generating billions of minutes of customer calls.

Number testing provides a wider variety and end-to-end perspective. Spearline's number testing provides latency measurement of real audio across the whole path of the audio, including through the PSTN/mobile telephone network. Our test provides insight as to how to improve quality, reduce jitter and packet loss, and more.

Network monitoring will focus on the internal network. Spearline helps verify paths from the customer's vantage point into the private LAN/WAN network space.

The impact of numbers failing

- Customer frustration, will have a negative effect on your net promoter score (NPS) and your customer effort score (CES)
- Increased average handling time (AHT) and lower first call resolution (FCR) rates, impact on cost and reducing margins
- Increased mean time to resolution (MTTR), with technical staff spending time troubleshooting rather than working on more valuable developments.

Number Testing

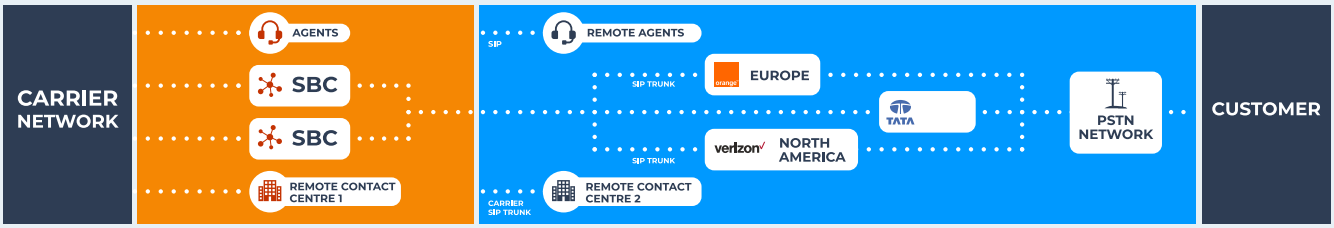


Diagram 1: Number testing allows you clear sight of your customers experience by testing the entire call route, including via all carriers operating outside your network.

Number testing allows you to see your call centre the way your customer sees it. It gives you all the information you need to fix any problems before they impact on the customer:

- Identify issues in real time by replicating the customer experience from the outside in.
- Hold carriers to their SLAs by building a picture of repeated testing and you will be able to identify when there is continuous audio quality loss. This will allow you to pinpoint where and when carriers are not maintaining agreed levels of audio quality.
- Have all the data you need in detailed call logs to troubleshoot any issues immediately. Going to a carrier, or colleagues, with detailed call logs showing where calls have failed, puts you in a completely different position to having delayed and partial information collected from customer complaints.

Where could number testing take your organization?

Number testing enables you to replicate your customers' experience the way your customers do. If you're focused on improving your customer metrics for NPS and CES, then you can't afford to be in the dark about losing calls and quality on your lines. if you want to free up your technical staff to work on valuable improvements to your systems, then you need to reduce your MTTR when issues arise.

Either way, testing your numbers, as well as monitoring your network, will give you the business intelligence you need to achieve your goals.

> "Testing your numbers, as well as monitoring your network, gives you invaluable business intelligence."

CASE STUDY

You can't rely on customer complaints to alert you to TELECOMS ISSUES

Following a load balancer issue which caused one in five calls to our customer's contact center to suffer dead air, a review of customer reports took place. Despite the issue lasting over 30 hours, and an estimated 4,000 customer calls impacted, only one customer complaint reached the telecoms team.

That complaint was 13 hours after Spearline first reported the issue. If 4,000 failed customer calls results in just one complaint reaching the telecoms team, you need other methods of finding out what your customers are experiencing when they call your numbers.

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Spearline is a technology company that proactively monitors toll and toll-free numbers for connectivity and audio quality globally.

As well as supporting telecom based organizations, such as contact centers and conferencing companies, Spearline works with other major organizations to ensure their global telecoms infrastructure is performing to the highest standards. Spearline works with large enterprises across diverse sectors, such as financial, pharmaceutical, travel and retail multinationals.

Spearline has conducted millions of test calls worldwide, resulting in billions of data-points. It has global coverage and operates a support service 24 hours per day, 365 days per year for its customers internationally. It is headquartered in Skibbereen, Co Cork (Ireland) and has offices in Waterford (Ireland), Romania and India.

Want to improve your organizations telephony experience? **Get in touch today.**

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