



Guide to Effective Number Testing

The Importance of Replicating Your Exact Customer
Path to Improve Customer Experience

Welcome to our comprehensive guide to effective number testing. In this guide, we will provide you with insights into the hidden gems of our testing system, as well as the factors that matter most when testing customer experience in voice calls. We will show you the importance of global coverage and why proactive monitoring for global businesses requires truly worldwide coverage.

You will gain further insights into how number testing can enhance your customer experience, maintain the brand reputation, and provide you with peace of mind.

We are confident that this guide will be an invaluable resource to understand every aspect of number testing and Cyara's approach to problem resolution.



Ola Budak
Spearline Product Manager, Cyara

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Introduction

While there are a number of communication channels available, such as email, in-app messaging, and chat; phone calls have always been a reliable way to address the most urgent and critical issues with your customers.

In fact, contact phone numbers remain a crucial communication option for businesses. Some individuals still prefer to make a phone call rather than using other channels to communicate, and there may be situations where a phone call is the only means of contact for an individual, particularly when they are unable to use digital methods of communication.

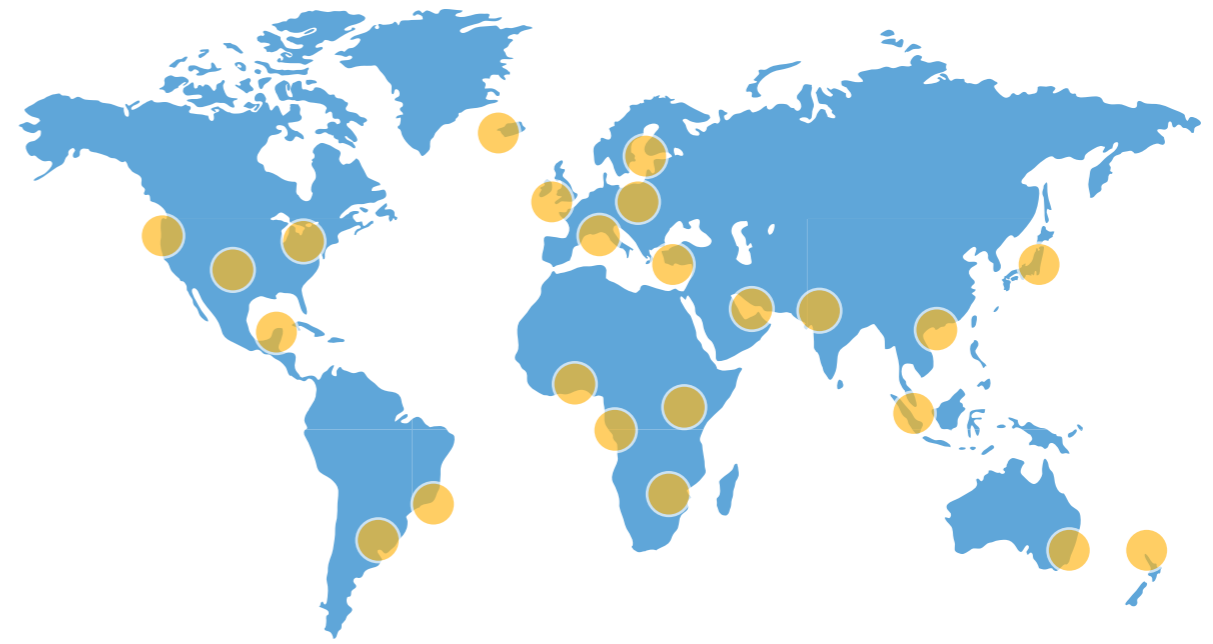
As your customers are located all over the world, they rely on your organization's local numbers to reach you. This means that as well as using different carriers and devices, they will also be calling from different locations. If you don't test your numbers locally, replicating your customers' behavior and call path, you may miss out on valuable business opportunities and cause poor experiences for your customers.

The quality and accessibility of your lines plays a crucial role in your brand reputation and this can be easily affected when your customers are unable to reach you, or if audio quality on your line is poor. Each of these are vital to understand as you work to ensure that your customers can reach you.

Let's dive into the details. Cyara's private, local infrastructure allows you to quickly and reliably test your numbers from wherever your customers are located around the world.

This means:

- **Reduced MTTR (Mean Time to Repair/Resolution)**
- **Collaborative Intelligence**
- **Local reach at a global scale**
- **Powerful testing capabilities**



80+
Countries



90+
Fixed-Line Carriers



160+
Mobile Networks



130+
Locations



Did You Know?

On average, our global data shows that a single phone number can experience connectivity issues between 5-12 times per month. Issues with connection are critical and can have detrimental consequences for your business due to customers being unable to reach you. And serious audio quality issues — ones that can be detected by the human ear and will affect the conversation — are experienced globally on average 3-7 times a month. These can include clipping, low volume, drops in audio, and latency.



The Complexity of Global Communications

The pace at which communication technologies continue to evolve is very fast. Network providers are constantly investing in new hardware and software to remain competitive in an ever-changing landscape. Integrating new and legacy equipment can be challenging, as it needs to be done with great care to avoid interoperability issues while maximizing the value of new investments. However, varying technology selections and implementation strategies can add layers of complexity when networks need to communicate with one another, posing significant challenges for network providers.

The shift from Public Switched Telephone Network (PSTN) to data-based services has led to voice communication migrating to the internet, where it coexists with video and data applications. Each network provider is bound by regulatory rules in the countries in which it operates, creating a unique approach to voice delivery across multiple networks. As a result, what appears to be a simple phone call can quickly become quite intricate.

Thanks to the internet and social media, even the smallest businesses can now access international markets. Nonetheless, supporting global markets can be difficult. Many businesses rely on centralized support hubs staffed by multilingual personnel to provide their sales and service support. However, this approach requires IT teams to manage communication with great care. While self-service options are increasingly popular, the need for knowledgeable human assistance remains critical. Toll-free and local phone numbers are a key part of this process, directing calls to a central switch and connecting customers with individuals who possess the appropriate language and product expertise. Although the support team may be located on a different continent, customers will still receive seamless assistance that feels close to home.

While network operators often have geographical strengths, they still have limitations in their coverage areas and none have global coverage capabilities. To address this, larger operators may use subcontractors to expand their coverage, while some businesses may use multiple operators to reach their desired markets.

This is a common approach applied by businesses to ensure that their customers are always connected.

In addition, operators may not always have enough capacity to handle periods of high demand. To address this, operators often partner with others to redirect traffic via alternative routes. However, the more operators that are involved, the higher the risk of complications arising is.

IT teams frequently communicate with technical support personnel from multiple network operators, and they may have to engage with several teams to resolve a single problem due to multiple operators being involved in establishing a call path. This can be challenging... but effective communication and coordination among all parties involved can lead to a successful resolution.

As many players can be involved in delivering one single call, correctly managing network partners is critical for businesses. It can be difficult to troubleshoot and resolve problems when multiple parties are involved, but with a collaborative effort, the task becomes much easier.

The Importance of Number Testing

Real World Scenario

Imagine a scenario where your customers reported that your German Toll-Free number was not working. As you are based in France, you had no means to test the number yourself, so you asked your colleague in Germany to test the number for you. Your colleague successfully tested the number from their landline, leading you to believe that the issue was caused by your customers dialing the number incorrectly. However, complaints from customers still persisted, stating that they were unable to connect to your number.

You then contacted your carrier and provided them with the customer call samples, but they didn't come back to you for several days. Eventually, they advised you that no issue was found and that the call sample given was now too old to investigate, asking you to provide a fresh one. Despite this, your number was still not accessible to your customers, and it seemed to be affecting the origination of the second-largest mobile network in Germany, potentially impacting a large number of customers.

You managed to contact the customer and asked them to retest, but they were still unsuccessful. Again, you collected the call sample and reached out to the carrier. After investigating further, the carrier found that the issue with your number's accessibility was related to a specific mobile network provider. Calls originating from that network were being rejected on the call path by one of the interconnects, and

because you had not been testing in the same way your customer was calling, you were not aware of the problem.

As a result, despite your customer reporting the issue, you faced a number of problems:

- Your high-priority number in a European location was inaccessible to a large number of customers for days, putting you under constant pressure to resolve the issue.
- You were unable to replicate the exact customer call path, as you weren't calling from the same network.
- Additionally, the call samples you provided were too old, and you had to chase your impacted customer for a fresh sample.

These Situations Cost You Time, Resources, and Money

This type of problem is very common today. However, it puts you under unnecessary pressure when resolving issues, if it is even possible to resolve them. Through using a number testing and monitoring tool, you could have avoided this situation completely.

Having a testing solution in place would have saved you money and resources, but most importantly, it would have given you peace of mind that everything was running smoothly.

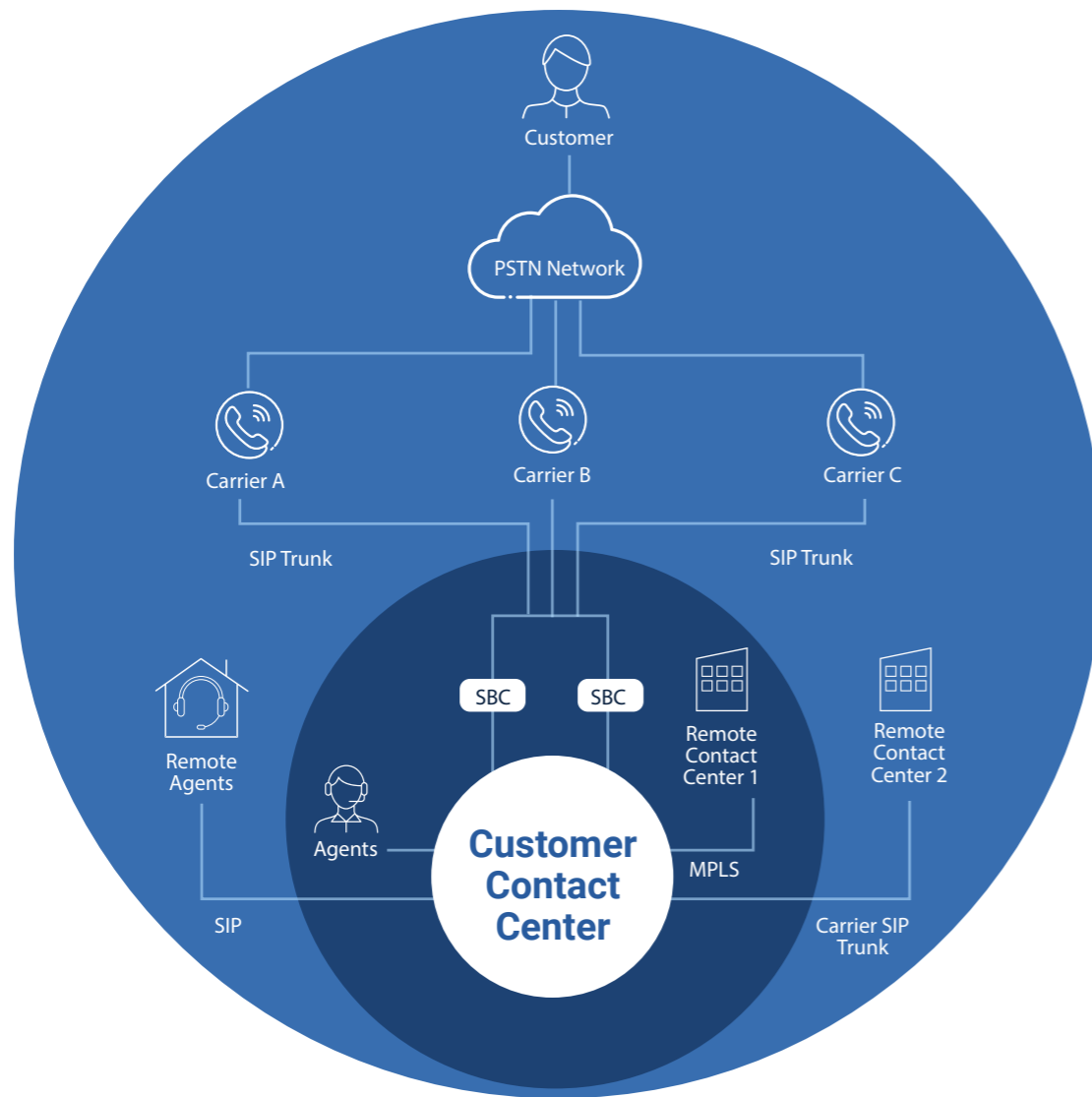


Get the Solution

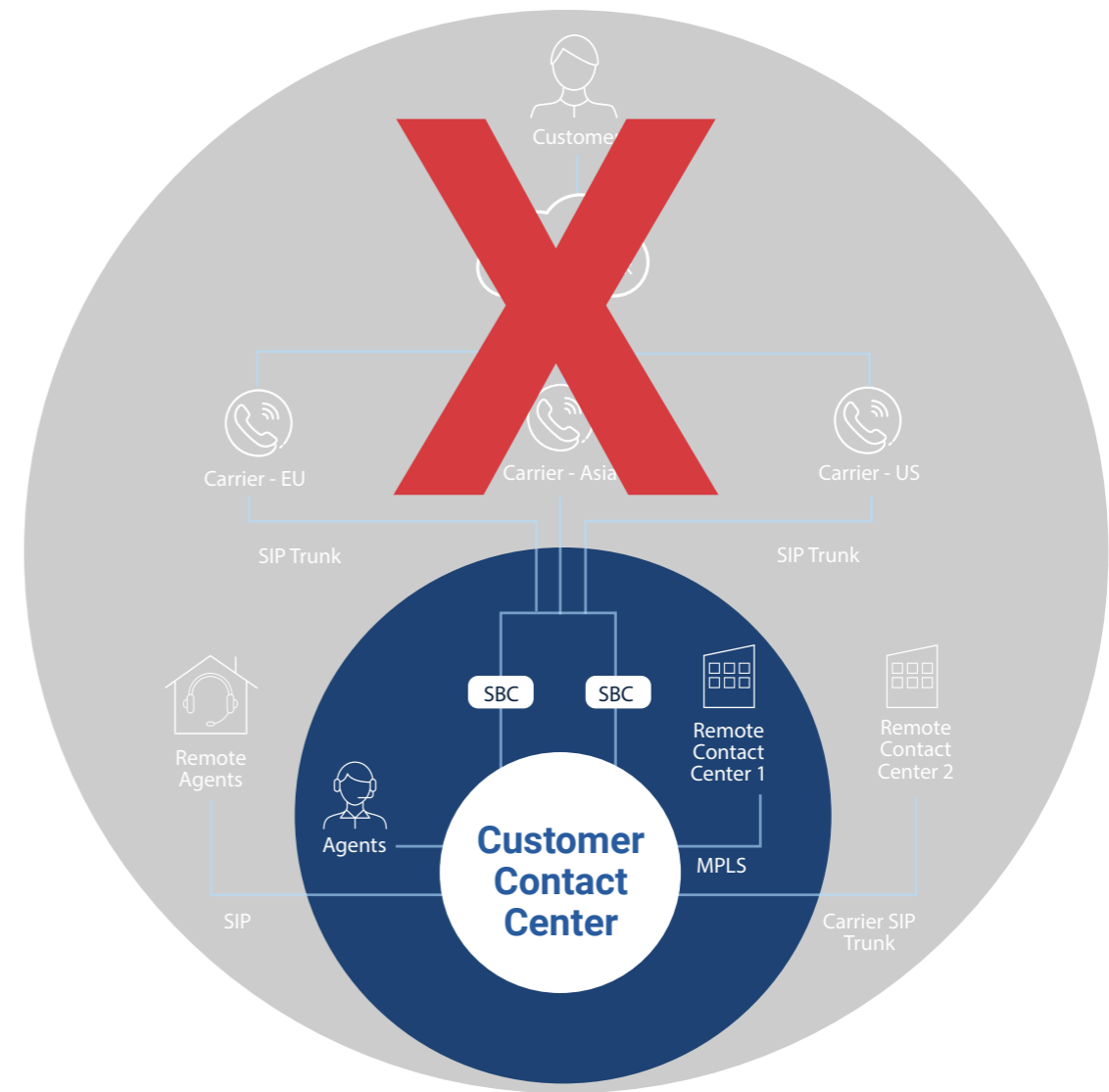
Voice Assure allows you to replicate your customer's behavior by calling the number in the same way they do, and providing you with the call samples instantly. Proactive testing from both fixed and mobile networks alerts you to issues that may occur on your numbers, including accessibility and audio quality, allowing you to resolve it before it impacts your customers.

Number Testing Vs. Network Monitoring

By simulating customer calls and conducting testing in a manner that replicates their actions, you gain insight into their experience and can promptly address any issues. While network monitoring is essential, it alone cannot fully encompass the external environment. However, when combined with number testing, it ensures comprehensive coverage of blind spots. This is crucial because relying solely on network monitoring may not provide a holistic understanding of the customer experience, considering the involvement of multiple providers and networks, leading to potential variations in their experiences.



Global In-Country Number Testing

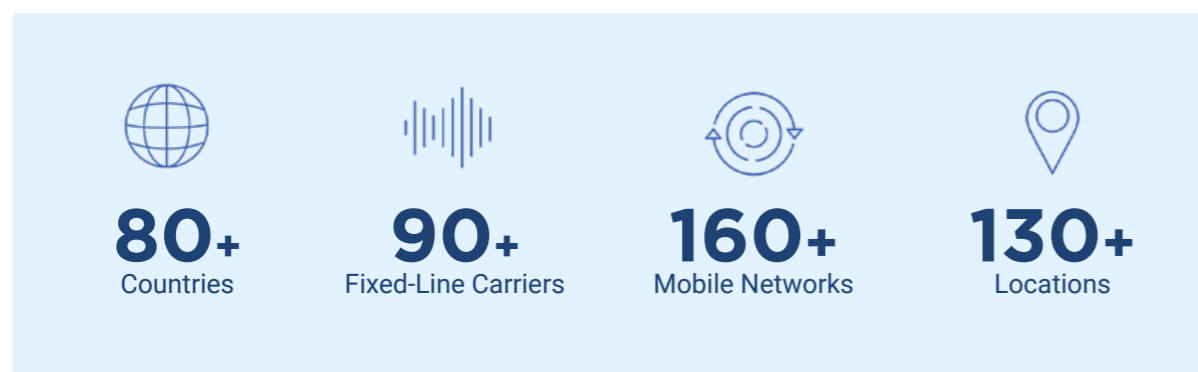


Network Monitoring

Proactive Monitoring Requires Truly Global Coverage

Cyara's Private, Local and Global Infrastructure

As we navigate an increasingly interconnected world, having a reliable and extensive network for phone number testing is crucial for all businesses. At Cyara, we understand the significance of having wide global coverage to support the needs of our customers. Wherever you are generating your revenue, we are there to generate your test calls. We are proud to provide coverage in 80+ countries and support 90+ fixed-line carriers. We also have 160+ mobile networks available worldwide with a presence in 130+ locations.



Our commitment to customer satisfaction drives us to rapidly expand our mobile and fixed-line coverage, taking into account the valuable feedback we receive from customers and prospects. We understand the importance of the US market and as a result offer our US domestic customers the ability to generate test calls from multiple locations across the US and Canada.

Having such a wide selection of carrier networks and locations to test from equips you with very powerful knowledge of what your customers are experiencing and allows you to quickly resolve any issues that may arise.



Did You Know?

All of our phone numbers in each of these locations are available for customer testing. Customers can utilize outbound testing scenarios and test directly to our numbers or set the call forward to measure quality or latency.

Choose Proactive Over Reactive

The Reactive Approach

In a reactive approach, you're already responding to customer complaints and trying to solve the issue after it has occurred. This approach can result in a delay in identifying and resolving the issue, causing frustration for both your customers and your business.

Furthermore, relying on a colleague or third party to test the number can introduce variables and inconsistencies that may not accurately replicate the customer experience. This can lead to missed issues that continue to affect your customers.

We promote proactive rather than reactive testing. Proactive testing allows you to catch issues before your customers even notice them. By regularly testing your numbers from multiple locations and networks, you can ensure their accessibility and quality.



Quick Tip

Think outside of the box and replicate the customer path for faster resolution!

Why is Proactive Testing So Crucial?

As a business, it's essential to know how your phone numbers are performing and if they're accessible to your customers. However, it's often difficult to determine this unless you execute the call yourself, replicating the customer flow by dialing the number from the same network and location as your customer would do.

This is where proactive number testing comes in. By implementing a proactive number monitoring strategy, you can identify issues before they impact your customers. It's possible that your numbers may not be accessible for long periods without you even realizing it. We've had many customers share experience of not knowing when their numbers were down for days until customers reported it, prior to using proactive monitoring. Thanks to proactive monitoring they have gained awareness of ongoing, pre-existing issues that they were previously unaware of. This insight has enabled them to rectify these issues and prevent their customers from being impacted.

Typically, businesses would rely on customer reporting to identify issues, which can have a negative impact on reputation and sales. If your sales lines aren't accessible, you're missing out on opportunities to sell. If your emergency lines aren't accessible, you risk compromising the safety of your customers.



Get the Solution

We understand the importance of proactive number monitoring to ensure that your service is operational all the time and of the best quality. Our **number monitoring services** offer full visibility on your numbers, replicating your user behavior and delivering specific metrics that you can use to improve the line quality and performance, or fix any issues that arise before your customers notice.

Plus, our **comprehensive testing infrastructure** covers a wide range of locations and networks, so you can rest assured that your customers can always reach you. By proactively monitoring your numbers, you can save time and money by preventing potential loss of sales or reputational damage caused by outages.

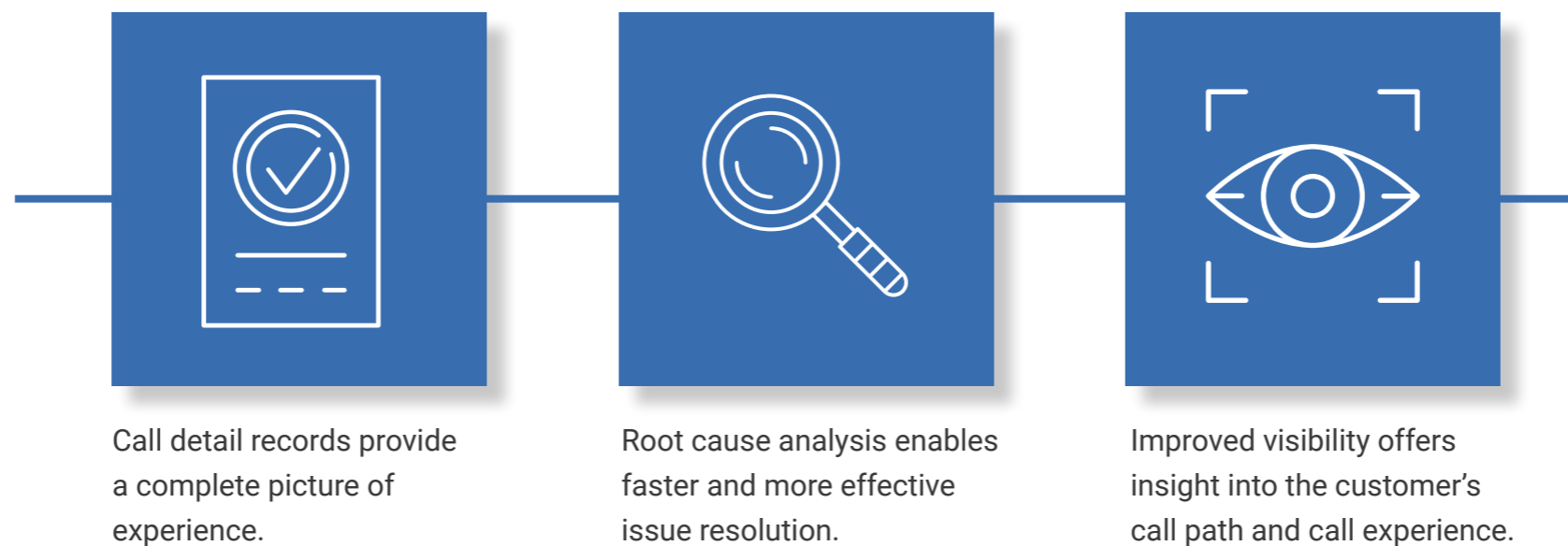
Reactive vs. Proactive: Shifting from Firefighting to Prevention

Reactive testing involves responding to customer complaints after an issue occurs, causing delays and frustrations. It introduces variables and inconsistencies that may not replicate the customer experience accurately, leading to missed issues. With proactive number monitoring, you gain awareness of ongoing issues, rectify them, and prevent customer impact.

Reactive Risk Management WITHOUT Testing



Proactive Risk Management WITH Testing



The Key Factor is Time

When solving issues, you have to be fast – and prevent your customers from being impacted. The lower the negative impact on your communication, the less damage is caused to your brand.

Every Factor Matters

Testing a local number from overseas may give you a false impression of the issue, and may cause you to miss failures that happen locally for your customer. If there's a problem with the number and you are trying to test it internationally, your call path may not be the same as your customer's call path. This can include different interconnect carriers that are not involved in local calls, and it can lead to different results. This is why it's essential to test the number using the same scenario and behaviors as your customer.

Within the call path, every factor matters, such as how the call was generated, what time it was made, and whether it was generated via mobile or landline.

It's also crucial to test in the country where that number is located because the numbers you provide to your customers are specific to the countries they are located in. Additionally, toll-free numbers can only be dialed within the country.



Quick Tip

You can use **Voice Assure** to check if your ITFS (International Toll-Free) or UIFN (Universal International Freephone) services are working in the countries they are supposed to operate in. If not, you'll have unquestionable proof that the Toll-Free services you are paying for are not functioning as they should.



Get the Solution

With **Voice Assure**, you have this flexibility and have the power to accurately replicate your customer's experience. You can easily generate calls from over 80 countries and verify the accessibility and audio quality of your Toll and Toll-Free numbers, no matter where you are located.

Be like “The Flash”

We have all been there – the issue takes too long to resolve or you’ve missed the investigation window again – but both problems can be minimized when you have a number testing tool in place.

When it comes to understanding the end user experience of your phone number, having a wide range of carriers at your disposal is crucial. By originating calls from different carriers, you have a better sense of how your number is performing and pinpoint any issues that may be occurring. This not only streamlines the investigation process, but also ensures that resources are being used in the most effective way possible.



Quick Tip

The more visibility you have, the more power you have over your customer experience.

In addition, having a wide coverage area to test from, means that you can quickly narrow down the scope of the fault investigation. This leads to faster issue resolution and a decrease in mean time to resolution (MTTR), saving you both time and money, while also protecting your brand reputation. With this approach, you can proactively identify and address any issues before they have a chance to negatively impact your customers’ experience.

Never Miss the Investigation Window Again

Having access to CDRs (Call Detail Records) instantly allows you to provide them to your carrier for further investigation. This ensures that you never miss the investigation window as carriers typically only have logs available for 24 to 48 hours. By providing carriers with the CDRs report and recordings, it supports their investigation and contributes to minimizing MTTR.

Testing the same numbers from mobile networks or fixed lines, or from different providers helps you to better understand your number performance and behavior.

- You may see the audio quality via mobile is lower than the audio quality via fixed line.
- Or, audio quality and performance on a specific number via carrier A is lower than expected, but via carrier B the audio quality is perfect and everything is functioning correctly.
- Or, when dialing a specific number from one provider, you may encounter DTMF recognition issues, whereas using another in-country provider might not result in the same problem.

This extra information provides further knowledge on what your customers are experiencing, uncovering additional issues and helping to improve your service and make more informed routing decisions.



Get the Solution

You can originate your calls from different carriers and locations as if you were physically there using [Voice Assure Realtime](#).

A Look Behind the Scenes

In the previous sections, we discussed the importance of replicating your customer's call path with number testing and how this leads to effectiveness in resolving issues and improving your customer experience.

Now it's time to discover the hidden gems of our system and how they work seamlessly to provide you with accurate and dependable results. In this section, we invite you to gain a deeper understanding of the technology and expertise that powers our testing services. Let's take a closer look at what happens behind the scenes and how it can benefit you and your business.

Global Coverage: What is Involved?

Our customers are at the heart of everything we do, and we take their feedback seriously. We understand the importance of reliable and consistent mobile and fixed line coverage, which is why we are rapidly expanding our coverage to meet our customers' needs.



Get the Solution

Real-time alerting makes your proactive testing even more effective. Get notified immediately when issues arise and ensure your customers' satisfaction through a fully customizable alerting system which is available via email, webhook, Slack, or phone call.

Before any line is certified for use, we put it through a rigorous certification process to ensure it meets our high standards for quality and reliability. This process ensures that our customers can trust our services to deliver the expected level of performance.

We work closely with every carrier we partner with to ensure that we can manage our partnerships effectively. Our dedicated team of Carrier Relations experts has a deep understanding of the telecoms industry and works tirelessly to maintain strong relationships with our carrier partners.

We have robust monitoring mechanisms in place to ensure that our services are of the highest quality and are operational and available to our customers around the clock, every day of the year. Our customers can test their numbers 24/7/365, giving them complete peace of mind that they can rely on us to deliver the best possible service.

Our NOC (Network Operations Center) team and Carrier Relations team work closely with our carrier partners to ensure that the services we provide to our customers are of the highest quality. In some cases, we have even uncovered issues within our carrier partners' network clusters and worked with them to achieve a resolution. This level of dedication and expertise sets us apart from our competitors and ensures that our customers can rely on us to deliver the best possible service.

Minimizing False Positives

To ensure that false positive alerts are kept to the minimum, our highly-skilled team is enhanced with Artificial Intelligence. With infrastructure spanning across multiple countries, carriers, locations, and

traffic; false positives can be a huge drain on time and resources for IT and NOC teams, especially when they occur during off-hours or on weekends.

Intelligent alerting is a crucial step in ensuring that alerts are sent only when necessary. Our system provides a series of generated tests after detecting an issue to determine the number behavior, helping to filter out non-critical alerts and reducing alert fatigue. We prioritize critical issues, using advanced algorithms to identify them and send alerts accordingly. Our alerts are fully customizable, allowing customers to choose their preferred channel. With intelligent alerting, customers can be confident in timely and accurate notifications tailored to their needs.

Fewer false positives = Fewer sleepless nights!

With the combination of Intelligent Alerting, AI enhancement and human touch we are able to analyze call data and detect patterns that might indicate an issue, before it becomes a bigger problem. This means that alerts are triggered only when necessary, and your IT and NOC teams can focus their efforts on solving the real issues that impact customer experience.

While AI is a significant aspect of our approach, we also have a dedicated 24/7 support team who are able to quickly assess and resolve issues that may occur. Our team is composed of experts in telecommunications and customer experience. This combination of human expertise and AI ensures that false positive alerts are minimized, and real issues are addressed quickly and efficiently, saving time, resources, and ultimately protecting your brand reputation.

Project Gamma — AI Augmented with Humans

We are dedicated to delivering the highest quality results to our customers. As part of this commitment, we are constantly seeking ways to optimize our processes and enhance our efficiency. With this goal in mind, we have developed Gamma, a mechanism that utilizes advanced techniques to ensure precise and efficient testing and analysis. By leveraging Gamma, we are able to deliver faster and more accurate results to our customers, while maintaining the highest levels of quality.

DEFINITION:

Gamma (γ) is a mathematical symbol that represents probabilities, rates of change, and optimization. And we have named our mechanism accordingly, to reflect its ability to optimize our testing and analysis capabilities.

Project Gamma is a combination of deep learning, automatic speech recognition and business logic and is a powerful tool that brings an exceptional level of accuracy to each test result, with a particular emphasis on failed tests. Our AI currently has a 99.9% accuracy rate and is highly sophisticated, automating various tasks such as:

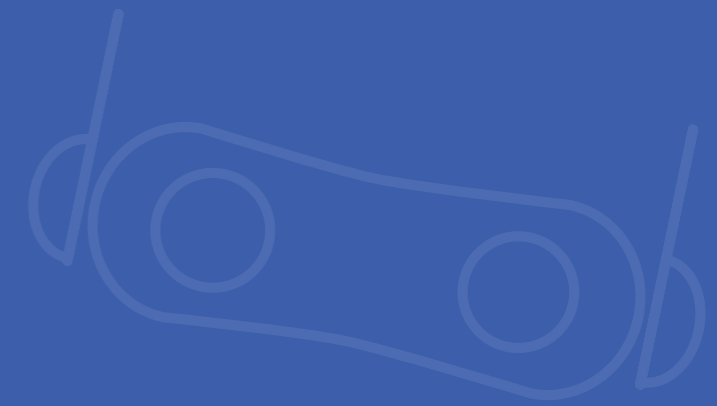
- **Audio quality checks:** The AI verifies if the failure is related to audio quality, reaching an out-of-office message or other announcements.
- **Backend response analysis:** Gamma checks backend responses from providers/lines before marking a call as unsuccessful. It analyzes all available data to ensure that all of our lines are operational.

- **Quality score approval:** The AI verifies that audio quality scores are below a certain threshold before publishing the result.
- **Automated re-runs:** Before marking a test as failed, Gamma can automatically re-run the test multiple times to ensure that the issue is not a one-time occurrence and can be replicated in subsequent runs. This verification layer adds an extra level of accuracy.

Gamma is continuously evolving, and we are constantly improving and adding more logic to it to increase its accuracy and precision.

Benefits of Combining AI and Human Verification

- Faster handling times and results delivery
- Results are more accurate - Gamma performs multiple actions at the same time.
- Our experienced support team is working 24/7 across the globe, and joining forces with Gamma has made for even more efficient monitoring and test results validation.
- We don't only take care of testing your numbers - we also take care of the noise they generate to make sure you can focus on the real issues.
- The combination of Gamma and human expertise makes our support even more accessible for you and your team.
- Monitoring can be performed 24/7/365, providing you with peace of mind knowing that your numbers are being monitored around the clock.



Project Gamma Facts



Millions of test calls flow through our infrastructure every month



When there's a failure on the number, Gamma swiftly validates it and takes appropriate action



0 false fails for the last 6 months



0 false alerts for the last 6 months



The average time to mark tests has improved by 23% since its release in 2021



Gamma interacts with tests every minute while Cyara's Support team monitors its behavior and can dedicate more time to assisting customers

Conclusion

Efficient number testing plays a vital role in improving your customer experience, which can lead to more successful business operations, revenue growth, and a stronger brand reputation. By ensuring that your phone numbers are readily accessible and your customer experience is consistent, you can build a loyal customer base that trusts and values your brand. This can ultimately lead to increased revenue, profitability and business success.

Our solution is designed to provide accurate and reliable results while minimizing false positives. With real-time alerting and quick access to call detail records, we allow you identify and resolve issues as soon as they arise.

Our fully automated testing allows you to customize your testing schedule and focus on other important tasks while we test your numbers. Additionally, our expert team is available around the clock to help you develop a solid testing strategy that fits with your business needs. By partnering with Cyara, you can rest assured that your customer experience testing is in good hands.

[Learn More](#)



Customer Smiles. Delivered at Scale.

Learn more at www.cyara.com

Call 1-888-GO-CYARA

Spearline is Now Part of the Cyara Family of Automated CX Transformation Solutions

Cyara revolutionizes the way businesses transform and optimize their customer experiences. Cyara's AI-based CX Transformation Platform empowers enterprises to deliver flawless interactions across voice, video, digital, and chatbot experiences. With Cyara, businesses improve customer journeys through continuous innovation while reducing cost and minimizing risk. With a 96% customer retention rate and world-class Net Promoter Score (NPS), today's leading global brands trust Cyara every day to deliver customer smiles at scale.

The Spearline suite of products and solutions allows organizations to achieve optimal communication quality and deliver outstanding customer experiences. Our proactive testing platform, Voice Assure, monitors worldwide toll-free, toll, and premium rate numbers for audio quality and connectivity. This ensures that Cyara customers can identify and address issues before *their* customers are impacted. In addition, our testRTC product set offers comprehensive WebRTC testing, monitoring, and support for web-based communication. Cyara's diverse product range enables us to serve a wide range of businesses across all industries by helping their customers to connect seamlessly with them.



Make Every Interaction *Flawless.*

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