



# Guide to Effective Number Testing

**The importance of replicating your exact customer path  
to improve customer experience**



**W**hile the majority of enterprises have realized the benefits of deploying new, innovative CX systems and channels, phone calls remain a cornerstone of an effective CX strategy. Your phone lines are often the first line of defense, making the first impression and setting the quality standard your customers should expect moving forward.

When your phone lines are working perfectly, customer satisfaction rises, interactions move seamlessly, and your revenue increases. But, when defects escape into production, risks and penalties quickly snowball, eroding trust and threatening your bottom line.

By leveraging automation and a true, in-country number testing solution, you can build a proactive CX strategy, ensuring you're always mitigating risk, deploying reliable experiences, and future proofing one of your most important channels for the next generation of CX.

This eBook will cover several key topics, including:

- How increased complexities in global communications put your CX performance quality at risk
- Why automated number testing is key to protecting customer trust and revenue
- The importance of proactive CX monitoring
- How to shift from a reactive to a proactive CX strategy
- The need to adopt a true, in-country number testing solution



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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 customer issues.

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.

In addition to using different carriers and devices, global customers call from different locations using local numbers. If you don't test those numbers locally, replicating your customers' behavior and call paths, you may miss out on opportunities and cause poor experiences for your customers.

Line quality and accessibility play a crucial role in your brand reputation, and this can be easily affected when your customers can't reach you, or if audio quality on your line is poor.

When it comes to testing, you need a solution that allows you to validate real-world interaction quality from where your global customers are located.

## This type of automated testing tool enables:

- **Reduced mean time to repair/resolution (MTTR)**
- **Collaborative intelligence**
- **Local reach at a global scale**
- **Powerful testing capabilities**



**140+**  
Countries



**400+**  
Fixed-Line Carriers



## Did you know?

On average, a single phone number can experience connectivity issues between five and 12 times per month. Connection issues have detrimental consequences for your business when customers can't 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

Communication technologies continue to evolve rapidly. 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 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 risk of complications rises.

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 report that your German toll-free number isn't working. You're based in France, so you ask your colleague in Germany to test the number for you. Your colleague successfully tests the number from their landline, leading you to believe the issue was caused by customers dialing the number incorrectly. However, complaints from customers persist, they say they can't connect to your number.

You then contact your carrier and provide them with the customer call samples, but they don't respond for several days. Eventually, they advise you that no issue was found and the call sample given is now too old to investigate. Despite this, your number is still not accessible to your customers, and it seems to be affecting the origination of the second-largest mobile network in Germany, affecting a large number of customers.

You manage to contact a customer and ask them to retest, but they're still unsuccessful. Again, you collect the call sample and reach out to the carrier. After investigating further, the carrier finds the issue with your number's accessibility is related to a specific mobile network provider. Calls originating from that network are being rejected on the call path by one of the interconnects, and because you aren't testing in the same way your customer is calling, you can't see the problem.

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

- Your high-priority number in a European location is inaccessible to a large number of customers for days, putting you under constant pressure to resolve the issue.
- You can't replicate the exact customer call path, as you aren'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

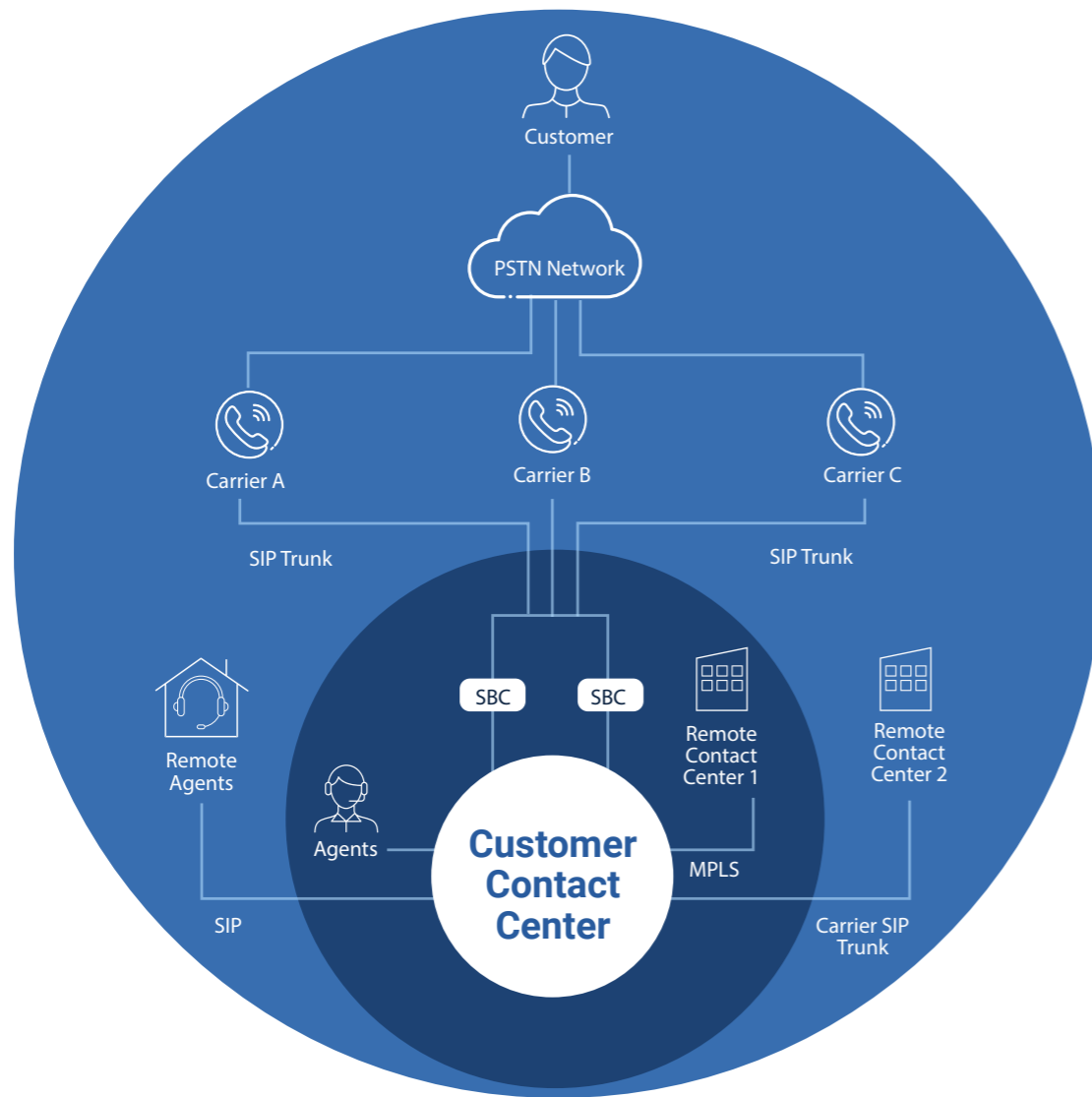
This type of problem is common. However, by using a number testing and monitoring tool, you can avoid this situation completely.

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.

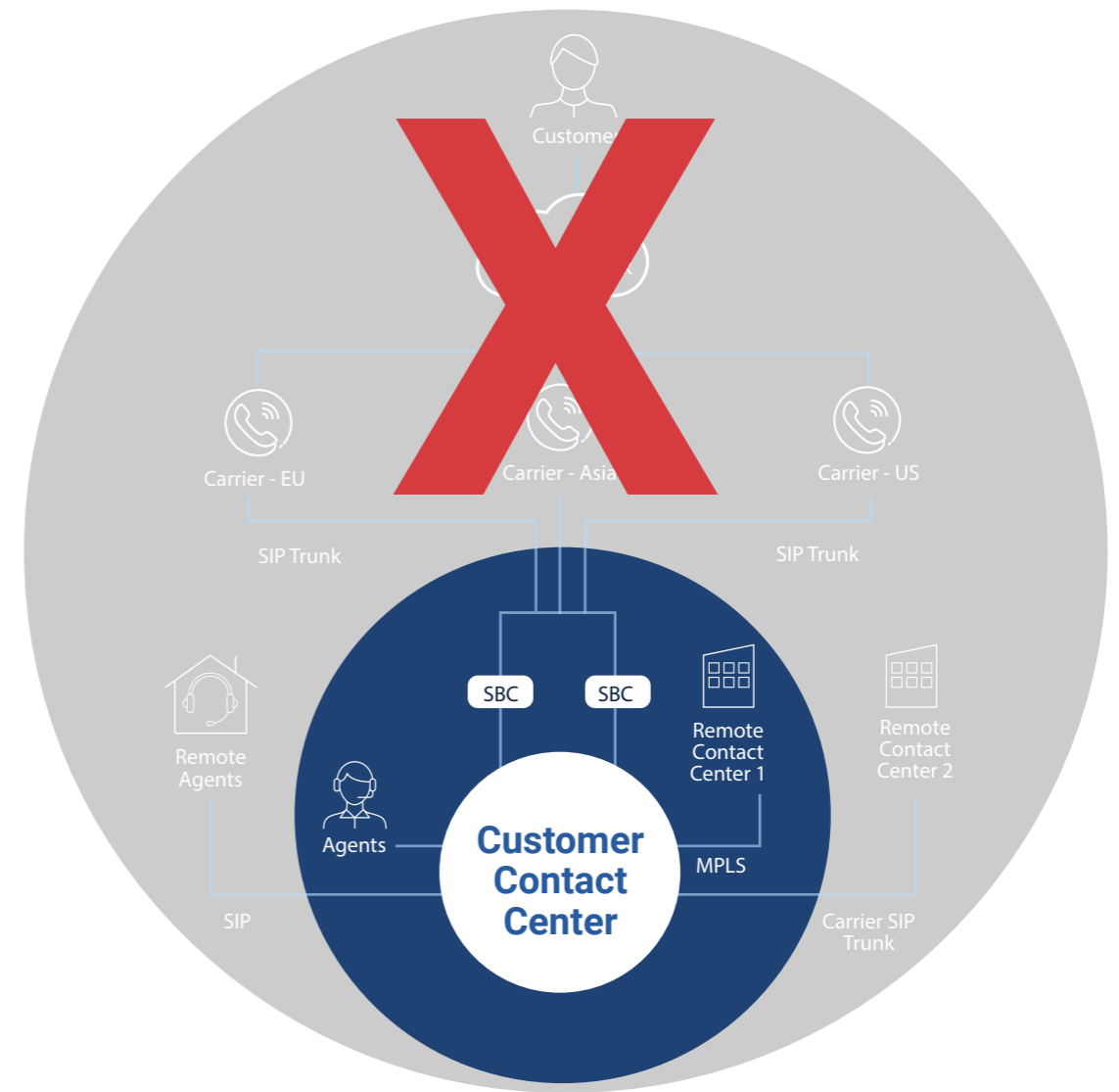


## Number testing vs. network monitoring

By simulating customer calls and conducting testing in a manner that replicates their actions, you gain insight into their experiences and can promptly address any issues. While network monitoring is essential, it 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. Cyara provides coverage in 140+ countries and supports 400+ global carriers, with coverage continuing to grow.

We understand the importance of the U.S. market and, as a result, offer our U.S. domestic customers the ability to generate test calls from multiple locations across the U.S. and Canada. This distributed coverage enables more representative validation, stronger regional performance insights, and improved confidence in customer experience delivery.



**140+**  
Countries



**400+**  
Fixed-Line Carriers

Similarly, Cyara provides broad geographic coverage across India to reflect the complexity and scale of the Indian telecom landscape. By supporting testing across multiple regions and operator environments, we enable accurate performance monitoring, localized validation, and consistent service assurance across diverse network conditions. This ensures enterprises can maintain service quality and reliability across both mature and rapidly evolving markets.

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



## Did you know?

All 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 responding to customer complaints and trying to solve an 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 a 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.

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.

## Why is proactive testing so crucial?

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 customers do.

This is where proactive number testing comes in. By implementing a proactive number monitoring strategy, you can identify issues before they affect your customers. It's possible your numbers may not be accessible for long periods without you even realizing it. Many businesses tell us that before they implemented proactive monitoring, their numbers could be down for days without their knowledge until customers complained. Thanks to proactive monitoring, these organizations have gained awareness of ongoing, pre-existing issues they were previously unaware of. This insight has enabled them to rectify these issues and prevent bad CX.

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

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



### Quick tip

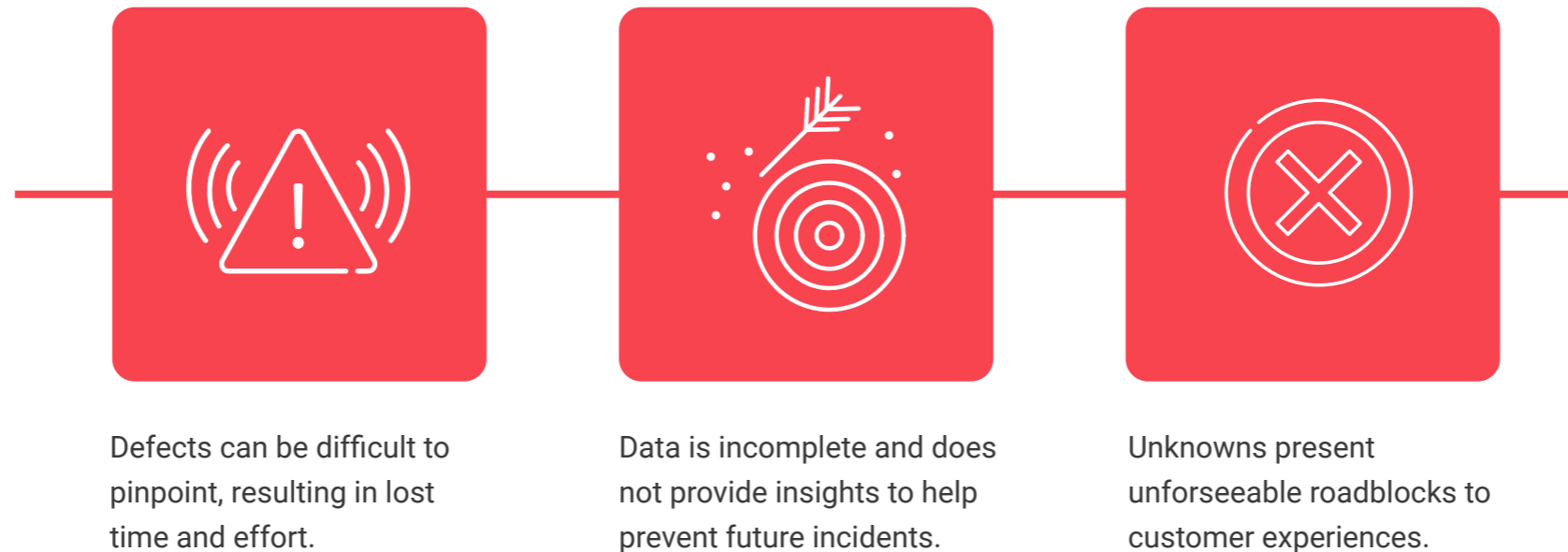
Think outside of the box and replicate the customer path for faster resolution!

Plus, our **comprehensive testing infrastructure** covers a wide range of locations and networks, so your customers around the world can always reach you. damage caused by outages.

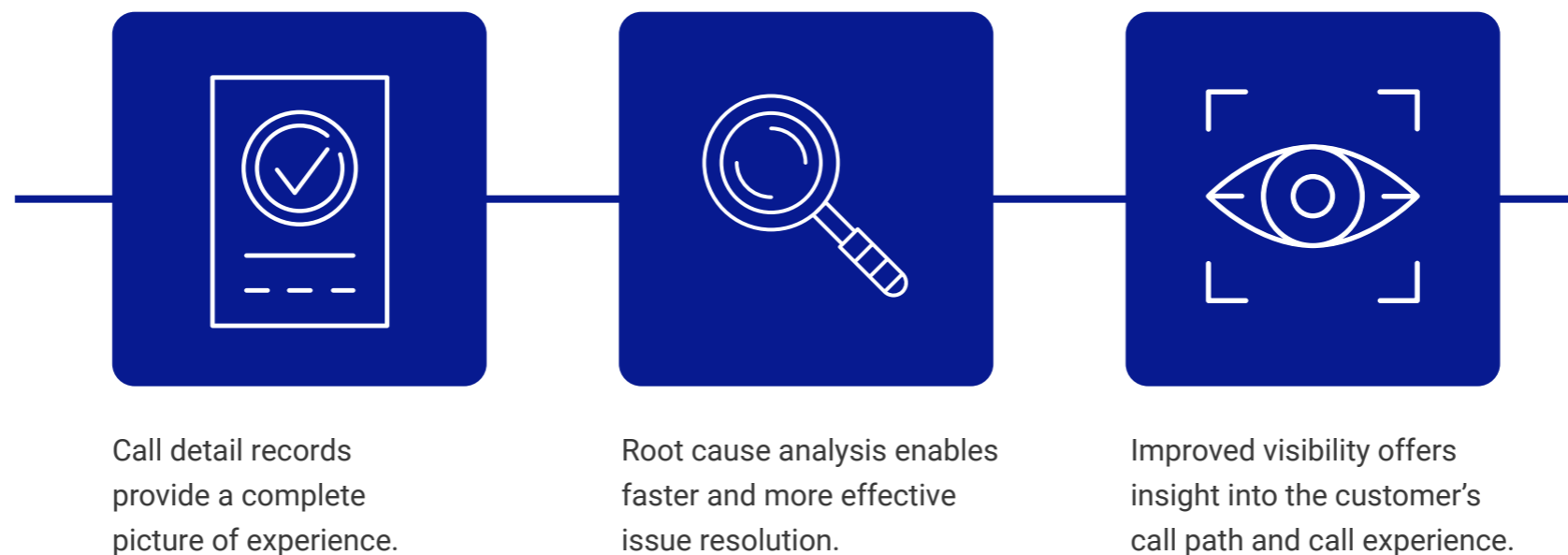
## Reactive vs. proactive: shifting from firefighting to prevention

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 overlook 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, including 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 for your customers are specific to their countries. Additionally, toll-free numbers can only be dialed within the country.



## 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.

When it comes to understanding the end-user experience, having a wide range of carriers at your disposal is crucial. By originating calls from different carriers, you get a clear sense of how your number is performing, and you can pinpoint any issues. This not only streamlines the investigation process but also ensures 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 you can quickly narrow down the scope of the fault investigation. This leads to faster issue resolution and a decrease in MTTR, saving you both time and money, while also protecting your brand reputation. With this approach, you can 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 call detail records (CDRs) 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. For example:

- 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 insights into 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 issue resolution and improved CX.

Now it's time to discover how Cyara provides 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.



### See the difference

**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, Cyara puts 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.

Cyara's dedicated network operations center (NOC) and carrier relations teams work closely with every carrier partner. 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 and ensures Cyara customers get the best possible service.

## Minimizing false positives

To minimize false positive alerts across complex, multi-country infrastructures, Cyara applies AI-driven validation to automatically assess detected failures before alerts are issued. Operating across multiple carriers, regions, and traffic types, we evaluate number behavior through automated follow-up testing to ensure alerts are triggered only when a genuine issue is confirmed.

In large-scale environments, false positives can significantly drain IT and NOC resources, particularly during off-hours. Our intelligent alerting framework prioritizes critical issues using advanced classification logic, filtering out non-critical noise generated across various carriers. This reduces alert fatigue while maintaining high sensitivity to real service-impacting events.

When an issue is confirmed, issue details and CDRs are included within the alert, providing actionable insights that help teams pinpoint investigations in the right direction from the outset. This clarity reduces ambiguity, accelerates triage, and shortens the time from detection to resolution.

Alerts are fully customizable, enabling customers to receive notifications through their preferred channels. The result is faster, more accurate escalation - delivered in the way that best supports operational response.

### Fewer false positives = Fewer sleepless nights!

**By combining AI-driven validation, intelligent alerting, and expert human oversight, we analyze call data to identify patterns that may indicate emerging issues before they escalate. Approximately 90% of validation decisions are automated, while non-deterministic cases are escalated through a structured review path.**

A dedicated 24/7 expert team oversees the automation framework, ensuring governance, continuous tuning, and rapid resolution where needed. This automation-led, human-augmented model enhances operational efficiency, reduces unnecessary escalations, and ultimately safeguards customer experience and brand reputation.

## Project Gamma: AI augmented with humans

We are constantly seeking ways to optimize processes and enhance efficiency. With this goal in mind, Cyara has developed Gamma, a mechanism that utilizes advanced techniques to ensure precise and efficient testing and analysis. By leveraging Gamma, we can deliver faster and more accurate results, while maintaining the highest levels of quality.

### DEFINITION:

Gamma ( $\gamma$ ) 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 Cyara testing and analysis capabilities.

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 has a 99.9% accuracy rate and automates tasks including:

- **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 and lines before marking a call as unsuccessful. It analyzes all available data to ensure that all 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.

Project Gamma operates on an automation-led validation framework engineered for sustained enterprise performance. Approximately 90% of test outcomes are validated and categorized automatically, achieving an average end-to-end processing time of 90 seconds.

Standardized decision logic is applied uniformly across every test, ensuring consistent classification regardless of volume, geography, or operational cycle. This removes variability, strengthens reliability, and supports scalable growth. The result is a validation model that delivers consistency, speed, and operational resilience within a single, unified framework.

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



~90% of validation decisions executed automatically



90-second average end-to-end validation and categorization time



Continuous optimization framework



Automation-led and human augmented



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 customer experience, which can lead to more successful business operations, revenue growth, and a stronger brand reputation. By ensuring 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.

Cyara's true, in-country number testing solutions provide accurate and reliable results while minimizing false positives. With real-time alerting and quick access to CDRs, we allow you to 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.

When it comes to verifying your number performance, you can't settle for subpar simulations. Cyara gives you all the tools you need to deliver reliable, seamless interactions for all customers, no matter where they live.

[Learn more](#)



**Your AI agents are live. Can you prove they work?**

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