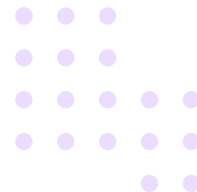




## **STIR/SHAKEN: What's Next?**

Jonathan Nelson  
Director of Product Management, Hiya



# Hiya is a proven & dedicated innovation partner

Hiya is the only company modernizing the voice call with trust, identity and intelligence as its core mission.



## SEA

Seattle HQ  
London & Budapest

## 170M

Active Users  
Growing every day

## 140

Employees WW  
Operate in 40+ Countries

## \$

Financially Strong  
Cash Flow Positive

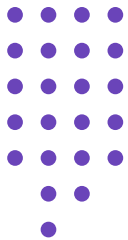
## 16

Patents  
Modern SaaS

# Abstract

- **Who are the illegal callers making spam and robocalls?**
- **What tools, tricks, or techniques do they use in their traffic?**
- **How has the illegal call space evolved over time?**
- **With STIR/SHAKEN rolling out, what have been the immediate effects?**
- **What should we expect to happen in the future?**

**...in the end, are the robocalls going to stop?**



**Know Your Customer** ~~ADVERSARY~~

# Source of insights into Robocaller Industry

Reputation monitoring and flagging service which powers AT&T Call Protect for US subscribers



Partnership with Samsung for the Smart Call flagging and blocking service for owners in 40+ countries



Hiya owns and manages telephony honeypots to capture and record inbound robocalls



# Our adversary is formidable

The illegal caller industry has two main segments:

## Illegal Lead Generation

collecting sales leads through mass-market robocalling

## Fraud

manipulate for money or info

They are professionals, with an impressive arsenal of tools:

- area code or neighbor matching
- demographic targeting
- short-term number leasing
- spoofing
- advanced interactive voice systems
- a/b testing of scripts and voice actors

# 157<sub>B</sub>

spam calls in North America and W. Europe

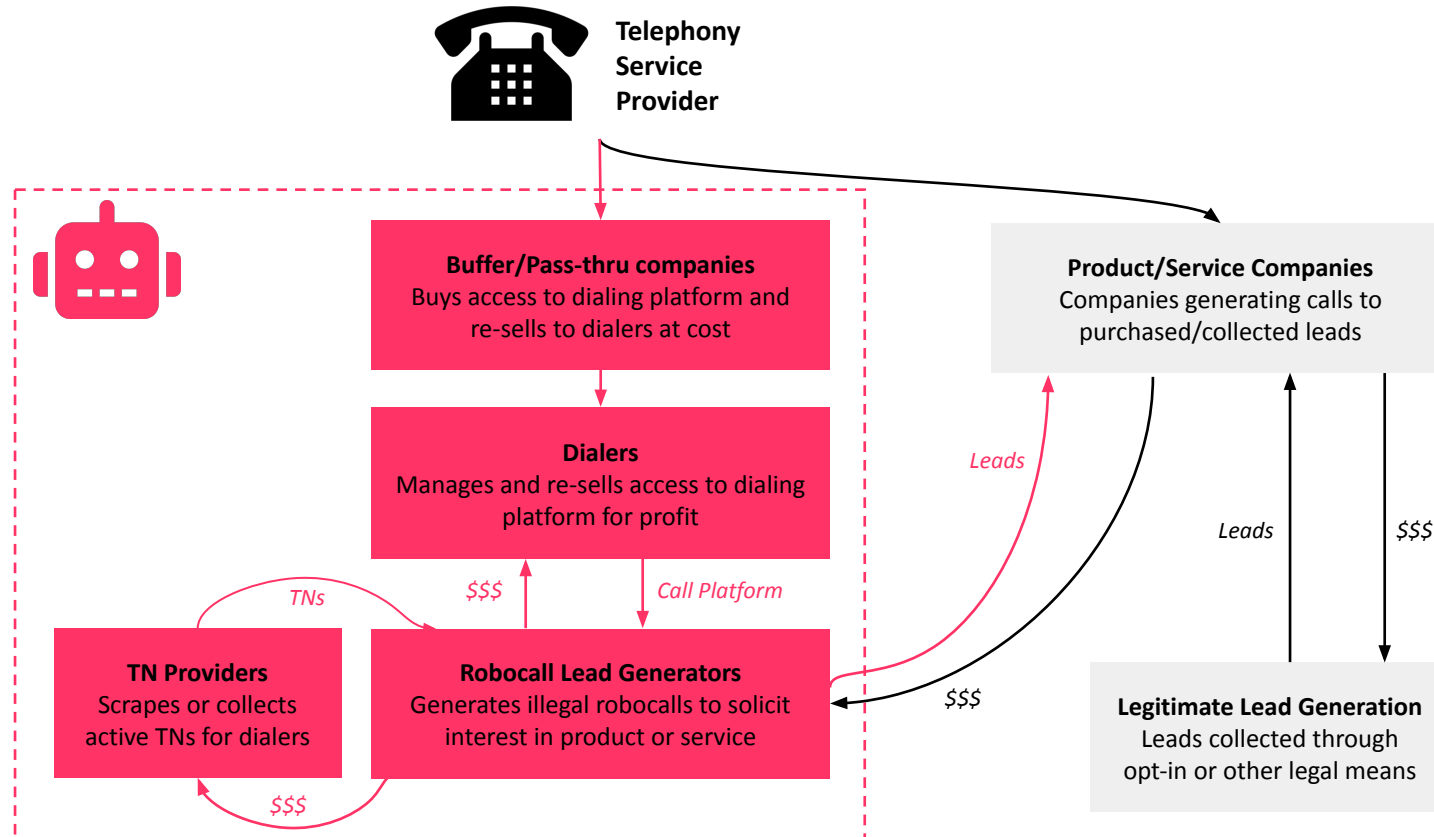
# \$20<sub>B+</sub>

estimated losses in United States

# 2 DAYS

between spam calls for the average American

# Example Industry Structure (Lead Generation)

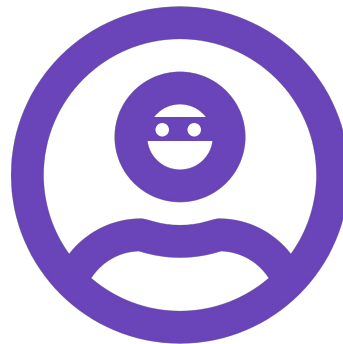


# Robocaller phone numbers: Leased or Spoofed?



## leased numbers

held for short campaign and released  
works for call-back campaigns  
harder for targeted dialing  
A or B-level attestation



## spoofed numbers

random or targeted spoofing  
cannot support call-backs  
easy to choose originating number  
B-level or no attestation



# Honeypot example: Industry is results-driven



VERSION A



VERSION B

The industry has operating costs. Bottom lines. Success metrics. We see the sophistication of their interactive voice response (IVR) systems and A/B tests

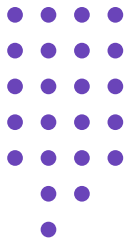
*Example: An A/B test with different voices, background noise.*

# Honeypot example: Industry is determined



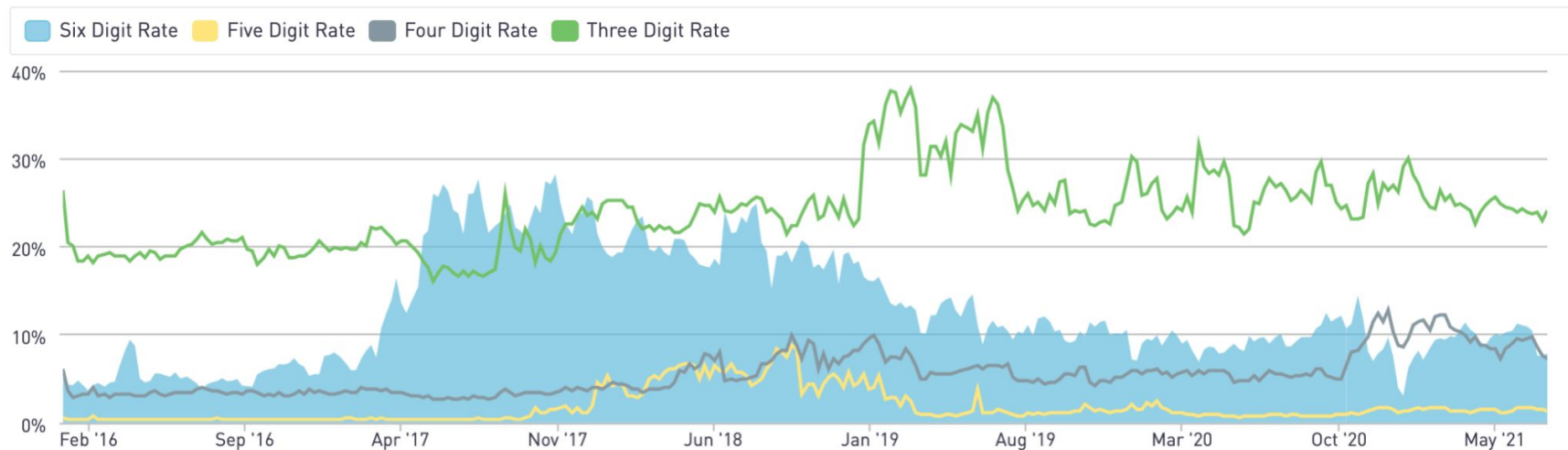
The industry will not hesitate to try various (and even misleading) tactics to maximize their success.

*Example: A recording pretending to be human*



# History of Illegal Robocalls

# Calling phone numbers have shifted over time

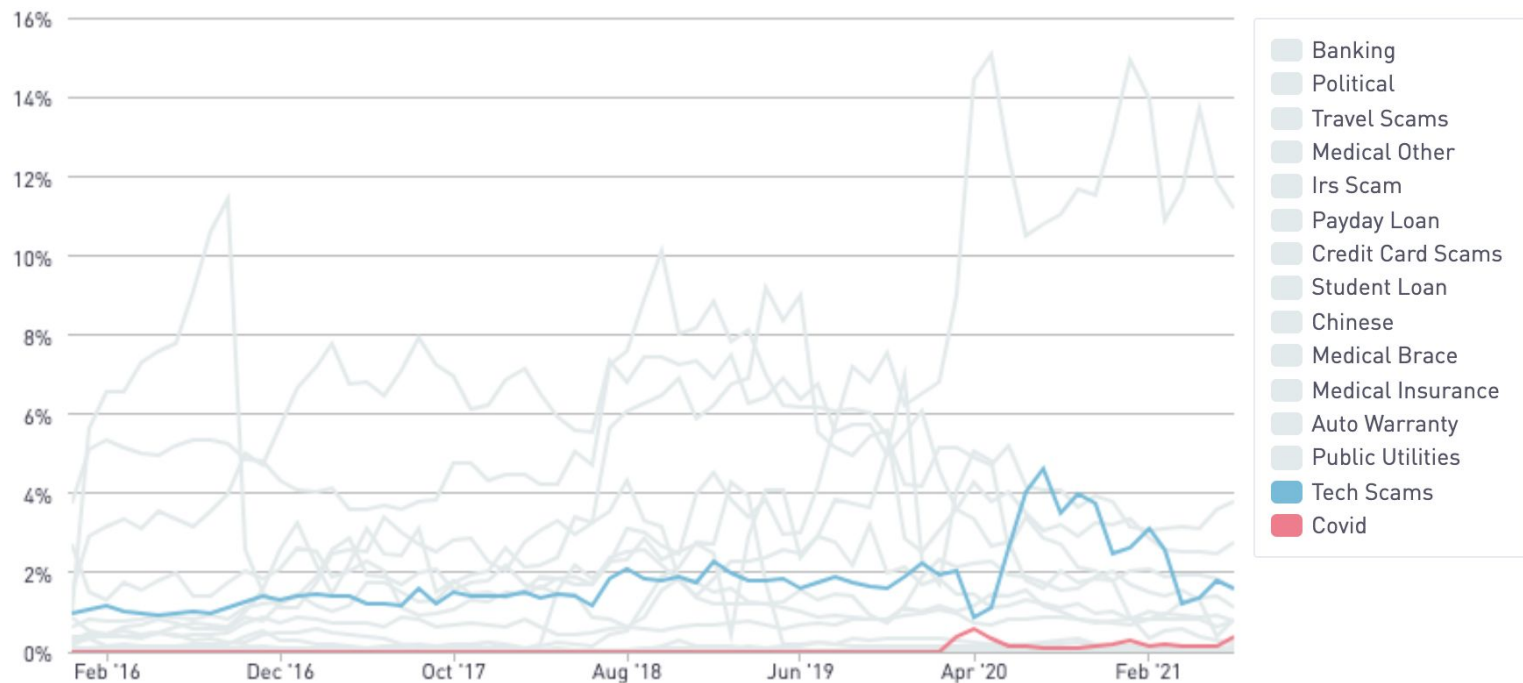


**6-digit neighbor spoofing heyday in 2017 and 2018 before falling out of favor**

**a dabble in 5 digits to bypass all those nasty “six-digit call blocking” rules**

**4 digit matches is the new hotness of 2021**

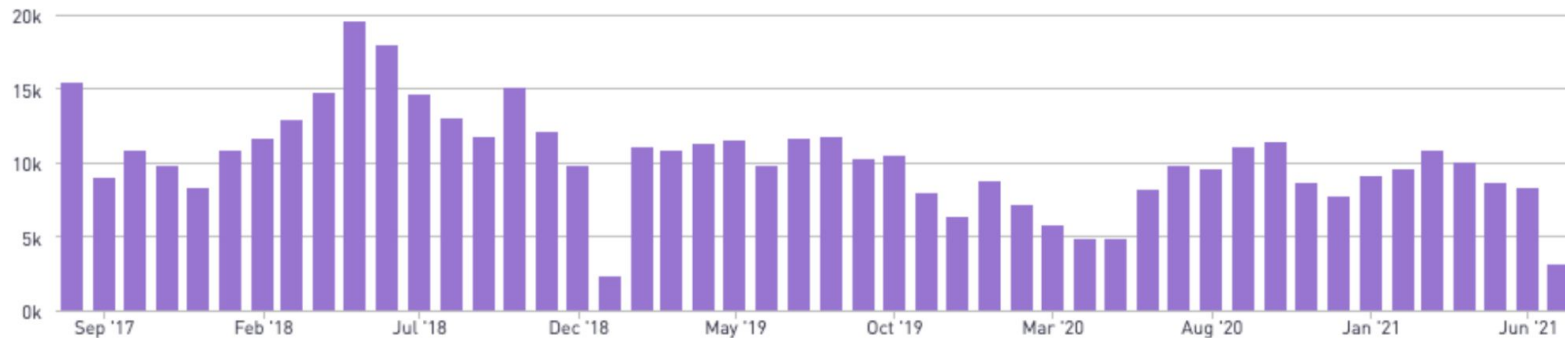
# Calling topics have shifted over time



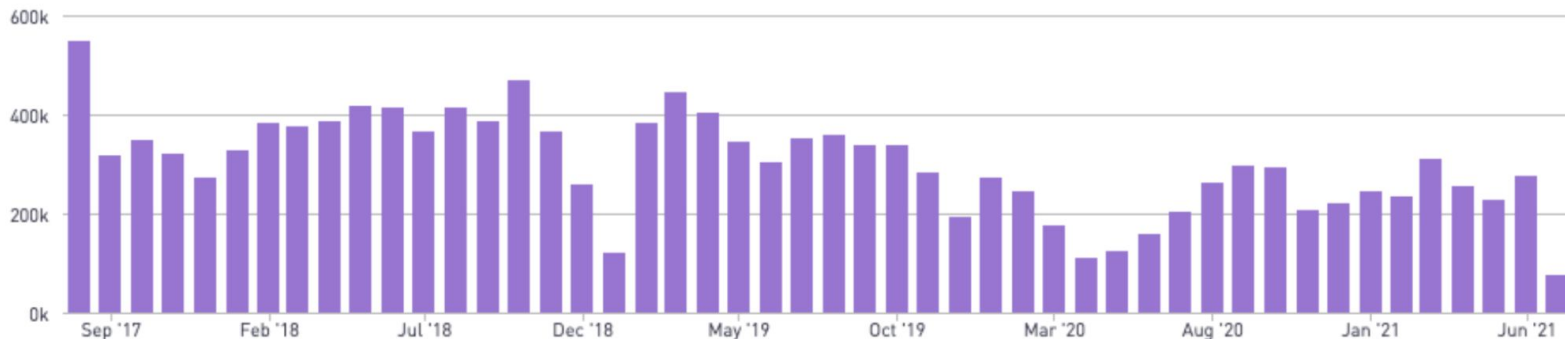
*Percent of spam complaints to Hiya mentioning a spam or scam topic*

# Illegal calling has been getting worse(?)

FCC Reports



FTC Reports

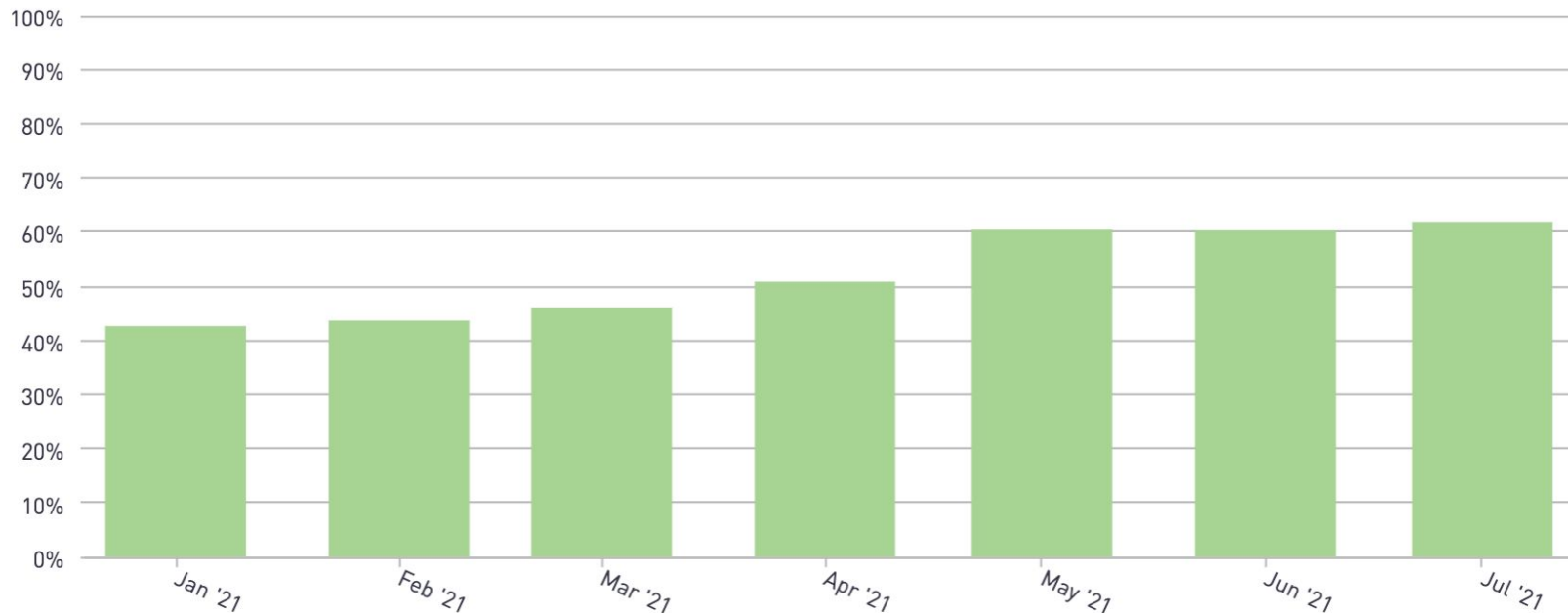




# Where We Stand Today

## STIR/SHAKEN deployed

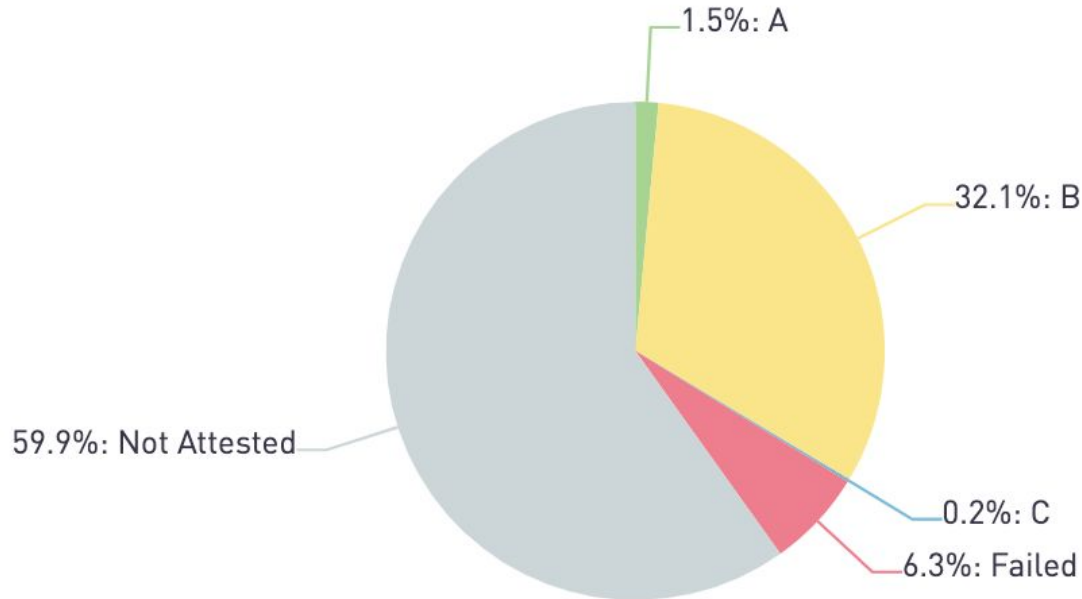
# Legitimate calls are signed, especially mobile



3 out of 5 calls are **fully attested**; especially mobile-originated traffic



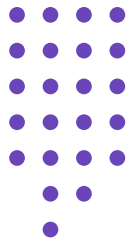
# Robocalls in honeypot are also signed



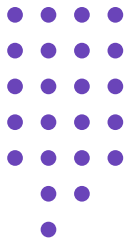
**35% of robocalls are attested A/B/C**

**95% of those are attestation level B**

**Why so little level A, for the short-term leased numbers?**



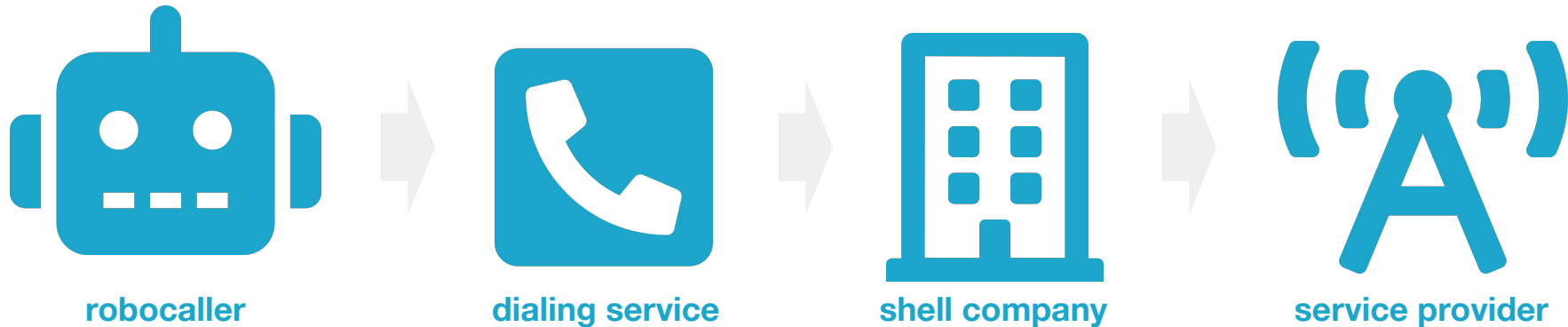
# What To Expect Next?



# Poll:

**Do you feel that STIR/SHAKEN is accomplishing the goal of reducing illegal calls?**

# Robocalls will continue, and will be signed



Through shell companies and plausible deniability, robocalls get onto the network.

**STIR/SHAKEN does nothing to specifically change that.**

Analytics companies and mitigation programs can.

# Robocall spoofing is on the decline

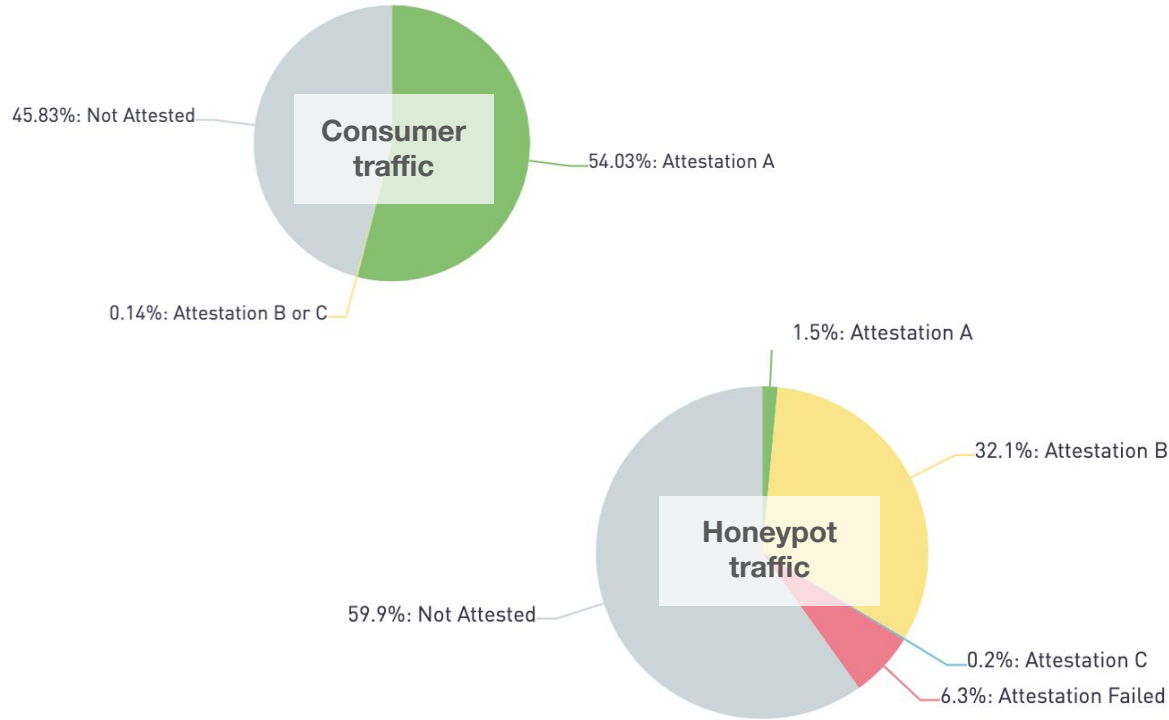
Based on honeypot,  
**robocalls evenly split**  
between leasing and  
spoofing

This began to change in  
April '21, now spoofing  
is **under 10%** of  
campaigns

Spoofing of signed TNs  
easiest to catch



# Analytics can target B & unsigned calls

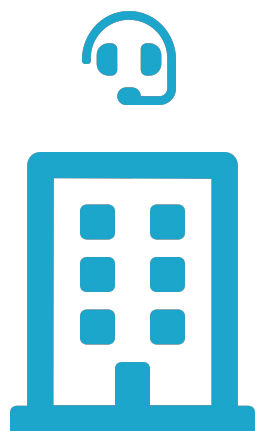


Leased TNs for  
robocalls not receiving  
A-level attestation

Suspect is due to how  
their industry is  
structured

Robocallers can be  
targeted in B or  
unsigned

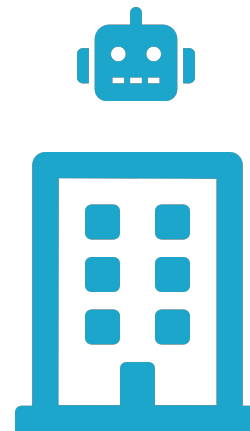
# Tension is building with legitimate enterprises



Major Bank



Dialing Service



"New Co."

**"ATTESTATION LEVEL B"**

**Legitimate enterprises will seek full attestation for all their calls,  
regardless of where they source their phone numbers**

# A change in policy could dilute level A

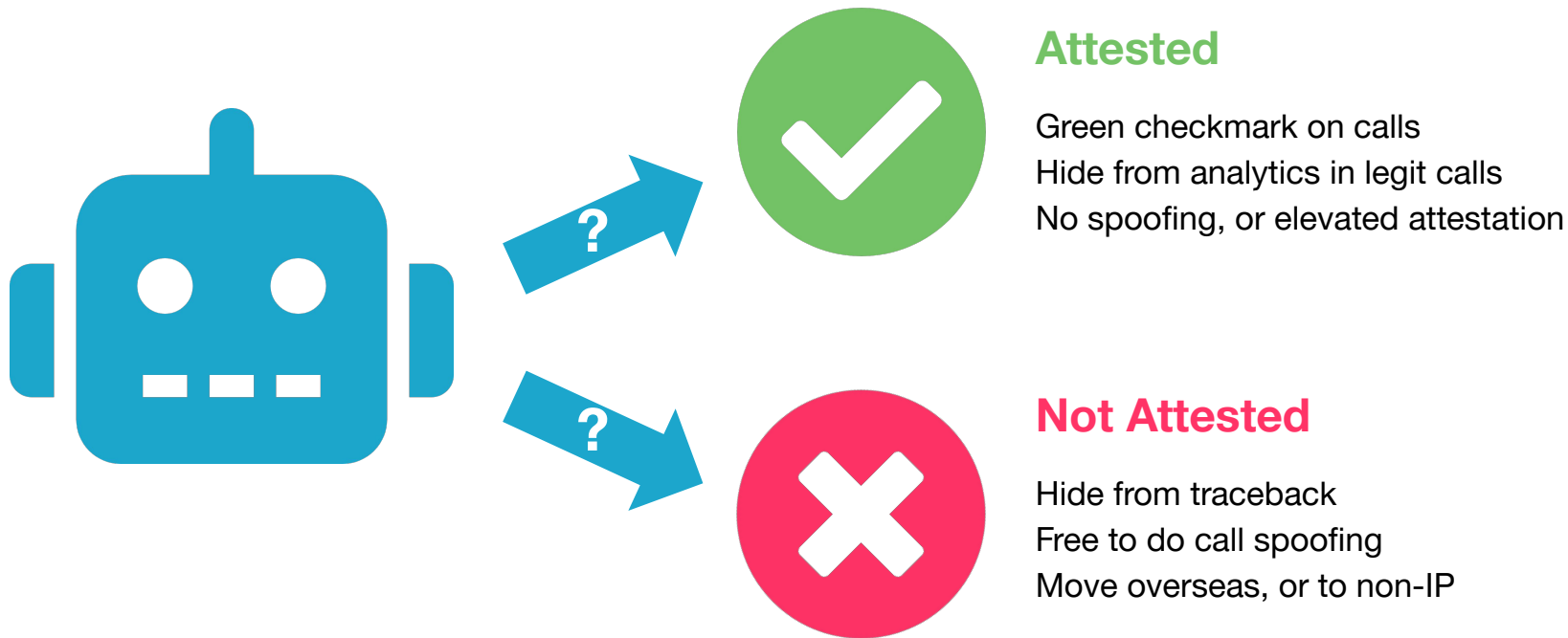


If you permit their calls, what characteristics deny them full attestation?  
Third-party verification services like Hiya Secure Call can support promotion to A



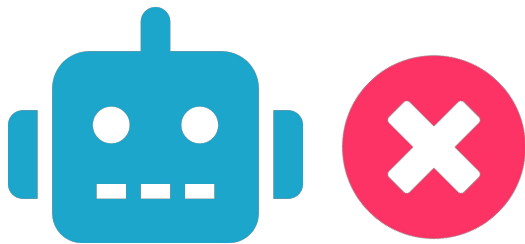
# Robocaller traceback: “To fear, or not to fear”

The robocall industry has a decision to make: **seek attestation**, or **avoid it**.



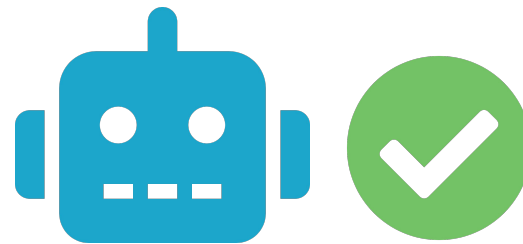
# Analytics and law enforcement are best chances for change

Our joint mission: **make robocalling unprofitable.**



## Unsigned robocalls:

Analytics services like **Hiya** leverage STIR/SHAKEN advantage to detect & flag



## Signed robocalls:

FCC, State AGs, law enforcement use traceback to find and shut them down

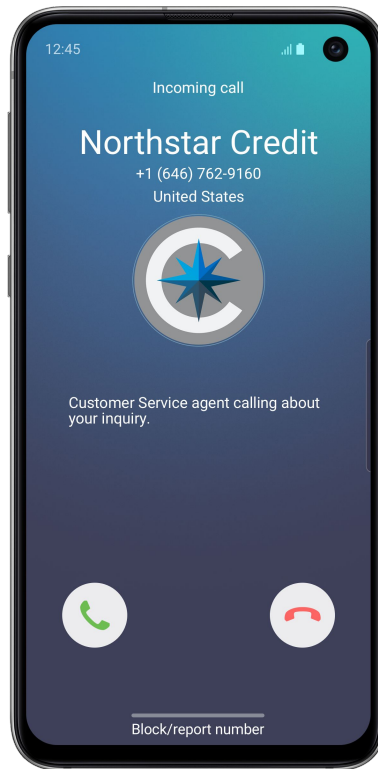
Analytics services like **Hiya** watch for origid or service provider sources of calls

# What happens if we succeed?

At this point **the damage is done**. No one is answering the phone.

Once the robocallers are off our networks, focus turns to legitimate callers to create **wanted calls** and **valuable connections**.

Rich caller identification and monitoring services like **Hiya Connect** bring back trust and identity to the phone call.





**Thank you!**

**Add analytics & rich enterprise data to your network:**

**[hiya.com](https://hiya.com)**