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

$16
Financially Strong
Cash Flow Positive

Patents
Modern SaaS

Forbes
America's Best Startup Employer

500
Technology Fast 500 2021

AICPA
SOC

GDPR

USTELECOM

hiya
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
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:

<table>
<thead>
<tr>
<th>Illegal Lead Generation</th>
<th>Fraud</th>
</tr>
</thead>
<tbody>
<tr>
<td>collecting sales leads through mass-market robocalling</td>
<td>manipulate for money or info</td>
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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

157B
spam calls in North America and W. Europe

$20B+
estimated losses in United States

2 DAYS
between spam calls for the average American
Example Industry Structure (Lead Generation)

Telephony Service Provider

Buffer/Pass-thru companies
Buys access to dialing platform and re-sells to dialers at cost

Dialers
Manages and re-sells access to dialing platform for profit

TN Providers
Scrapes or collects active TNs for dialers

Robocall Lead Generators
Generates illegal robocalls to solicit interest in product or service

Product/Service Companies
Companies generating calls to purchased/collection leads

Legitimate Lead Generation
Leads collected through opt-in or other legal means
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

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

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

Major Bank

Dialing Service

“New Co.”

“ATTESTATION LEVEL B”
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.

**Attested**
- Green checkmark on calls
- Hide from analytics in legit calls
- No spoofing, or elevated attestation

**Not Attested**
- Hide from traceback
- Free to do call spoofing
- Move overseas, or to non-IP
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