

Problem Statement:

Default call blocking is unproven for the completion of legitimate and rural calls, and could lead to excessive costs

STIR

(Secure Telephony Identity Revisited)

SHAKEN

**(Signature-based Handling of Asserted
information using toKENs)**

**These are the frameworks created to identify illegally-spoofed
Caller-IDs and to help prevent the completion of illicit robocalls.**



SHAKEN Combined with Other Steps (Like “Know Your Customer”) Can Help Beat the Bad Guys



“Know Your
Customer”



“Know Your
Customer”



Caller-ID will be:

- authenticated by the originating service provider, then
- verified by the terminating service provider.*

Fraudulent calls and texts come in different forms, and result from different motivations:

- **Telephone Number Spoofing and Robocalling (e.g., Rachel at Card Services)**
- **Neighbor Spoofing**
- **Access Stimulation Schemes**
- **Telephony Denial of Service (“TDoS”) Attacks**

Congressional Testimony

April 18, 2018

“...the technology is easy to obtain and can be used by anyone. Anyone can start a large autodial campaign from a home office.”

MR.
ABRAMOVICH

**“The underlying enabler for TDoS attacks
is the ability to use automation
to cheaply and easily generate hundreds
or thousands of simultaneous calls.”**

See DHS Science and Technology Directorate, “Telephony Denial of Service,”
https://www.dhs.gov/sites/default/files/publications/508_FactSheet_DDoSD_TDoS%20One%20Pager-Final_June%202016_0.pdf

“Reasons for TDoS attacks range from extortion to disruptive pranks. These attacks pose significant risks to banks, schools, hospitals and even government agencies.”

See “Partnering to Prevent TDoS Attacks,” (Jul. 9, 2018), <https://www.dhs.gov/science-and-technology/blog/2018/07/09/partnering-prevent-tdos-attacks>

Not all *robocalling* and *robotexting* are illicit, illegal, or unwanted, complicating the battle:

- School Notifications to Parents
- Prescription Pick-Up Calls/Texts
- Authorized Telemarketing or Debt Collection
- Local Community Emergency Communications

West provides and enables certain robocalling and texting services desired by the public.

Not all *Caller-ID spoofing* is illicit, illegal, or unwanted, further complicating the battle:

- Battered Women's Shelters
- Business Service Centers Using One Outbound Caller-ID Number for Callback Purposes
- Authorized Law Enforcement Investigations

Slowly-Reducing Tension Between U.S. Rules and Remedies



- **Call Blocking Traditionally Allowed “Only Under Rare and Limited Circumstances”: FCC Declaratory Ruling and Order Released June 28, 2007**
(<https://docs.fcc.gov/public/attachments/DA-07-2863A1.pdf>)
- **FCC Affirmed Consumers’ Rights to Control Received Calls and Assured Providers That They Face No Legal Barriers to Allowing Consumer Use of Robocall-Blocking Technology: FCC Declaratory Ruling and Order Released July 10, 2015** (<https://docs.fcc.gov/public/attachments/DOC-333993A1.pdf> and <https://docs.fcc.gov/public/attachments/FCC-15-72A1.pdf>)
- **Carrier Blocking Subsequently Deemed Permissive for Legitimate Subscriber Inbound-Call-Blocking Requests and for Certain Do-Not-Originate (“DNO”) Requests: FCC Robocall Blocking Order and FNPRM Released November 17, 2017** (<https://docs.fcc.gov/public/attachments/FCC-17-151A1.pdf>)

June 7, 2019 –



FCC Releases Default Call Blocking Declaratory Ruling

- **Permits Default Call Blocking**
- **Carrier-Analytics Based**
- **Based on Standard of “Unwanted” Robocalls**
- **Requires Carriers to Inform Consumers**
- **Allows Consumer Opt-Out**
- **Protects Against Blocking of Emergency & Public Safety Calls and Provides for Establishment of a Critical Calls List**
- **Preserves Rural Call Completion Rules**
- **Permits Challenges to Inappropriate Blocking**
- **Encourages Providers to Notify Callers of Their Blocked Calls**

Stated Intention: “...this Declaratory Ruling will ultimately increase call completion rates for legitimate callers.”

Laser Focus: Stop the Illegal Robocalls

Identify the Most Egregious Campaigns

Find The Sources

Make Them Stop

Green Checkmarks Are Nice

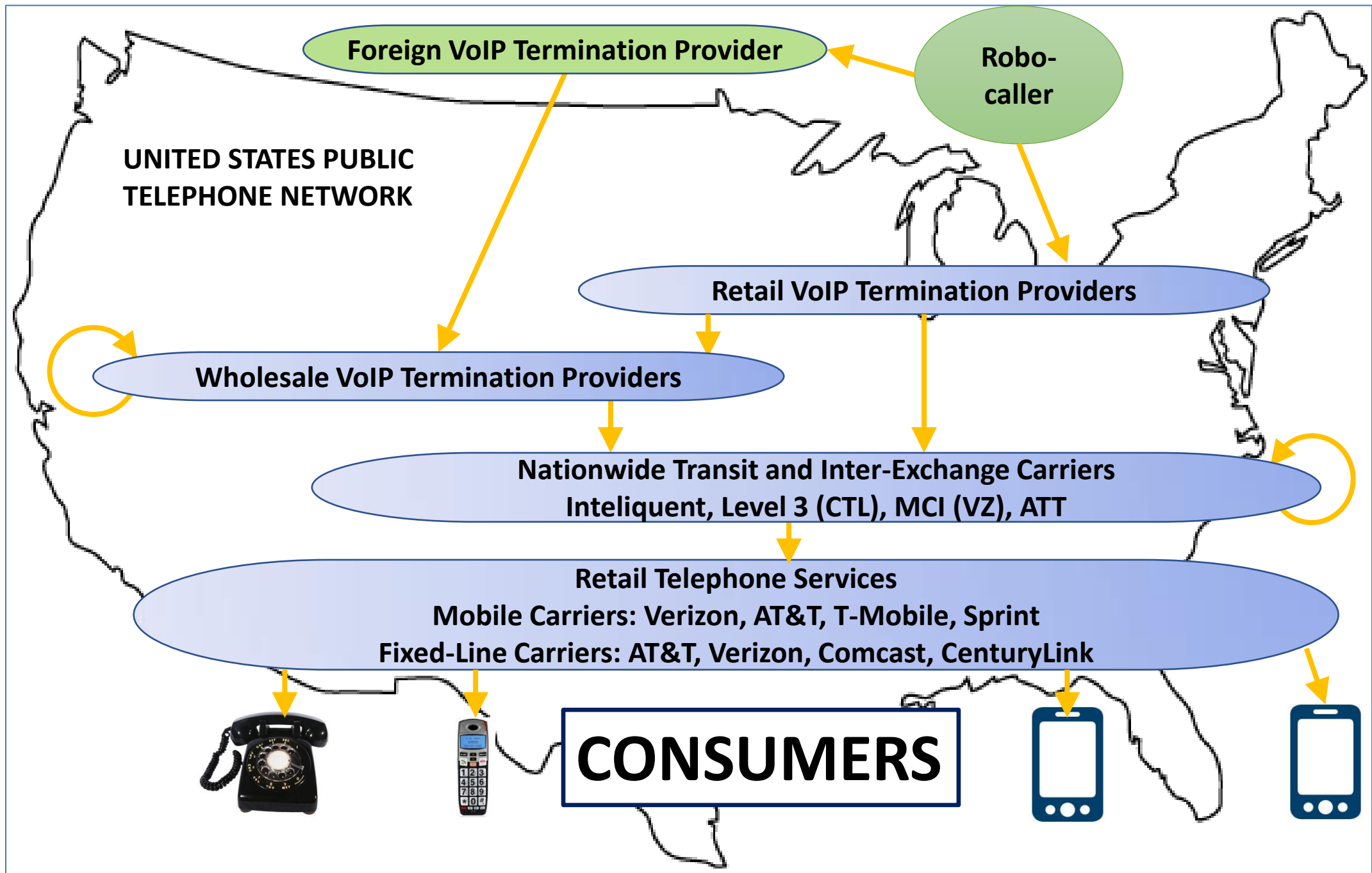
Big Fines Are Great

TOP PRIORITY FOR AMERICANS: STOP THE CALLS!

David Frankel, ZipDX LLC, dfrankel@zipdx.com, 1-800-FRANKEL 11-July 2019

Illegal Robocall Enforcement Challenges

- Identifying the source of the calls
 - Spoofing obscures the identity of the caller
- Lengthy, resource-intensive alternative process to find source
 - Step-by-step subpoenas
 - Records purged due to passage of time
 - Calls continue while process proceeds
- Some robocalls originate overseas
 - Issues with jurisdiction and law enforcement cooperation
- Perpetrator has disappeared by the time the investigation concludes
- Lack of compelling, indisputable evidence of non-compliance



Initiative: Harden Our PSTN Against Robocallers

- Every call to a USA +1 number enters through some USA provider
- These Originating Providers are our best defense against illegal calls
- Some VoIP Providers are inviting malicious traffic
 - Allowing unvetted customers to make millions of calls daily
 - Unrestricted Caller-ID – should be only numbers used with permission
 - No monitoring for short-duration & unanswered calls
- What to do?
 - Trace problematic calls back to the source
 - Engage the originating provider to investigate & turn off bad actors
- No impact to legitimate callers

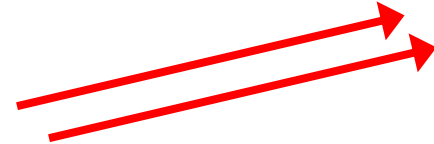
Identify and Rank Campaigns Daily

Campaign (Nat'l Volume in Millions)	Last 30 Days	Month to Date	Two Ago (6/25)	Yesterday (6/26)
1. Health Insurance - Pre-Approvals Ready	74.0	61.9	5.4	3.6
2. Interest Rate - Visa Alert System	59.9	51.2	3.0	2.8
3. Student Loan - New Changes	59.6	40.6	1.9	2.6
4. Health Insurance - Currently Accepting Enrollments	39.5	33.8	0.1	1.0
5. Home Security Scam - Home Security Promotions	36.4	31.6	1.8	1.7
6. Social Security - Want to Know About Case	34.0	29.0	1.6	1.5
7. Debt Reduction - Unsecured Credit Debt	33.5	25.9	2.2	2.7
8. Interest Rate - Final Courtesy Call	29.5	24.7	1.8	1.5
9. Loan Approved Scam - Up To \$15,000	29.6	24.5	1.2	1.1
10. Student Loan - Approved for \$0/Month Payment	25.5	19.9	1.1	1.1

Source: YouMail Nightly Report

Feeding Traceback

Most Prolific New
Campaigns from YouMail



Iterative Cycle

Call Example:
2019-06-05 16:47
TO 2125551234 FM 4155556789
Campaign Description
Audio Link

*Portal determines term provider,
DNC status, party names;
dispatches request to term
provider*

Terminating
Provider

*When term provider responds
with identity of next provider,
Portal dispatches next request.*

Intermediate
Provider

*If next provider not in DB, Analyst
researches & loads contact info
for this and future.*

Intermediate
Provider

Traceback

Several fresh call examples
For each campaign



Caller

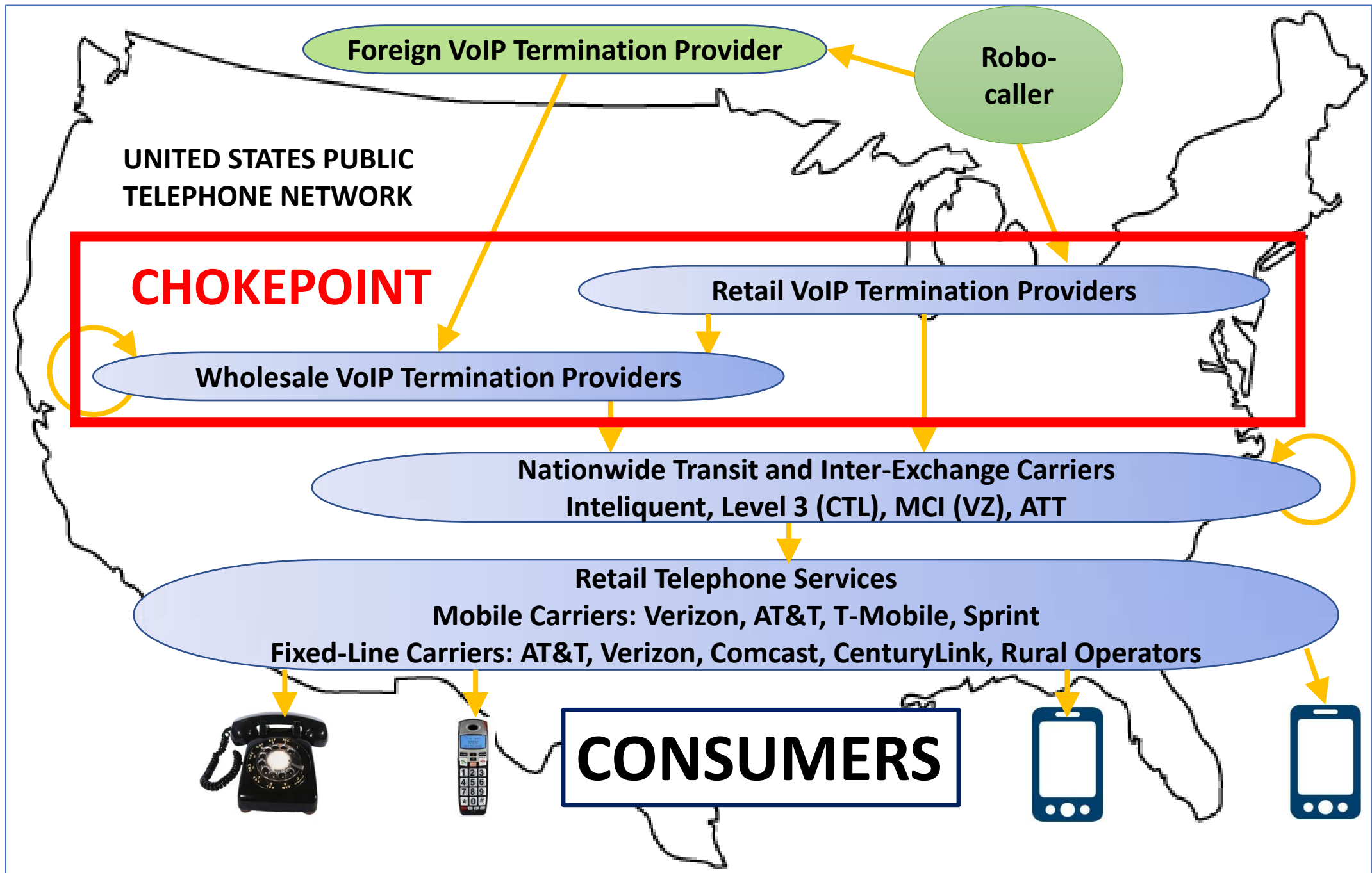
Originating
Provider

*Originating provider
engages w/ caller to
mitigate campaign*

Intermediate
Provider

Broad Industry Engagement in Traceback TODAY

- Spectrum of Participating Providers
 - All the major consumer-facing carriers & national transit networks
 - Dozens of smaller providers
- Hundreds of Fraud Analysts and Network Ops Specialists Engaged
 - Responding promptly to traceback inquiries
 - Passionate about finding and eliminating this traffic
- Successful Tracebacks in a Matter of Hours
 - We only need a few call examples to find the source of a campaign
- Enforcers Keen to Pursue Winnable Cases
 - FCC, FTC, USDoJ, State AG's, TIGTA, SSA-IG
- Scoring metrics to identify where to focus



Traceback-Fed Dual Tracks

- Selecting campaigns for traceback
 - Most prolific / problematic per YouMail; new campaigns as they emerge
 - + Those identified by carrier analytics
 - + Those identified by enforcement agencies
- TRACK ONE: Trace back repeatedly – Fast Response
 - Cease-and-desist to Caller / Originator when found
 - Iterate traceback (weekly) to confirm shutdown
 - If ineffective/unresponsive, engage downstream provider(s)
- TRACK TWO: Prosecution evidence package – Iron-clad deterrent
 - Traced back examples
 - 10,000's of violations w/ audio correlated to subpoenaed CDR's

Prosecution Evidence Package

- YouMail voice-mails capture:
 - Precise date & time of call; called and calling numbers; AUDIO
 - Post-processing: DNC status, spoofing characteristics, state, carrier
 - Violations:
 - Automated call to mobile (all YouMail examples are to real live mobile subscribers)
 - Announcement lacks identification of caller
 - Caller impersonates government official
 - Failure to honor DNC (selective)
 - Failure to provide operable call-back number
 - Spoofing / Truth-in-Caller-ID
- We'll accumulate ~10K examples daily for a 1M-calls/day robocaller
- Correlate to CDR's obtained from robocaller / provider / downstream