March 30, 2017

Via ECFS

Marlene Dortch, Secretary
Federal Communications Commission
445 12th Street NW
Washington, DC 20554

RE: Notice of Ex parte, Docket CG 17-59

Dear Ms. Dortch,

On March 30, 2017 David Frankel, CEO of ZipDX LLC met by teleconference with the following FCC staff to discuss the attached materials:

Kurt Schroeder, Micah Caldwell, John B. Adams, Jerusha Burnett

Regards,

/s/
David Frankel
CEO, ZipDX LLC
Monte Sereno, California
1-800-372-6535 / dfrankel@zipdx.com

ZipDX Reinventing Audio Conferencing For Business

Robocall NPRM / NOI
CG 17-59

David Frankel (dfrankel@zipdx.com)

30-Mar 2017

Agenda

- Problem Scale & Approaches
- NPRM - Technical Issues and Reactions to Consider
- NOI – Clearinghouse Approach; Monetary Disincentives
- FCC Support

Robocall Mitigation – Massive Scope

- Per FCC, 2.4 Billion calls per month
  - Making a dent in this won't happen one (million) calls at a time -- < .05%
- Robocallers will react to blocks that measurably affect them
- Ultimately we need solution(s) that protect the vulnerable population
- Ideally we need solution(s) that do not diminish the traditional telephony experience
- Caller-ID-based approaches are, in the near term, trivially defeated
  - They function only on a small scale, until robocallers circumvent them
- The tide will turn when robocallers are *deterred* from carrying out their trade
- Identifying robocallers at the source (or PSTN point of entry) is:
  - The most cost-effective way to "block" the calls
  - Scales to make a measurable dent in the problem
  - Provides an element of deterrence that can end the whack-a-mole cycle

What To Do?

- The robocall problem is deserving of energy, attention and funding
- Robocallers are clever and reactionary; solutions must anticipate their next move
- Robocalls are an industry-wide problem and need to be addressed cooperatively
- Long-term efforts to re-secure the network won't have a measurable impact for years
- We need a concerted effort focused on near-term mitigation
- Investment(s) should go where they will do the most good (calls stopped per $ spent)
- Some approaches will cost hundreds of millions of dollars industry-wide
  - Switch software upgrades; protocol modifications; new signaling/filtering platforms
  - Even these do not promise measurable results as robocallers react
- Rapid "out of band" call tracing is a promising solution

NPRM Concerns

- Long precedent for consumer-initiated "blocking" of received calls
  - SS7 "CLASS" features: Selective Call Blocking, Selective Call Forwarding, Anonymous Call Rejection, Distinctive Ringing, Do-Not-Disturb
  - So if an end-user says they don't want certain calls, by whatever algorithm, that should be fine
- However: DNO-based blocking and blocking invalid/unassigned numbers is problematic and will, in any case, not deter robocallers on scale

Do-Not-Originate

- Presumably somebody will step up to maintain an "Official" DNO list
  - Request will be validated to insure that only proper owner of number can add to list
  - List will be routinely distributed to (originating, intermediate, terminating) carriers
- How do numbers get removed from the list?
  - What happens when number is reassigned or owner wants to start making outbound calls (a few years down the road)
- What treatment will calls get when they are blocked?
  - Busy Signal? Recorded announcement? Mysterious disconnect?
  - Blocking may lead to problems similar to Rural Call Completion, where a small fraction of legitimate calls (but still a large number) do not go through

CLID In Real Life – Invalid CLIDs

- Can't always distinguish between National Number and E.164
  - 3312029999 is a mobile phone in Downers Grove, IL
  - 33120298989 is a fixed line in Paris, France (11 digits not valid for NANP)
  - 4329821234 – invalid NXX in Texas, or valid number in Austria?
  - 8252403456 – invalid NXX in Alberta, or valid number in South Korea?
- How quickly will ALL carriers unblock when new codes are opened?
- Some legitimate PBX's send only 4-digit extensions – invalid CLID
- Interworking results in 0000000000 or other anomalies
- Legitimate calls will be ensnared (not a large fraction, but a large number)

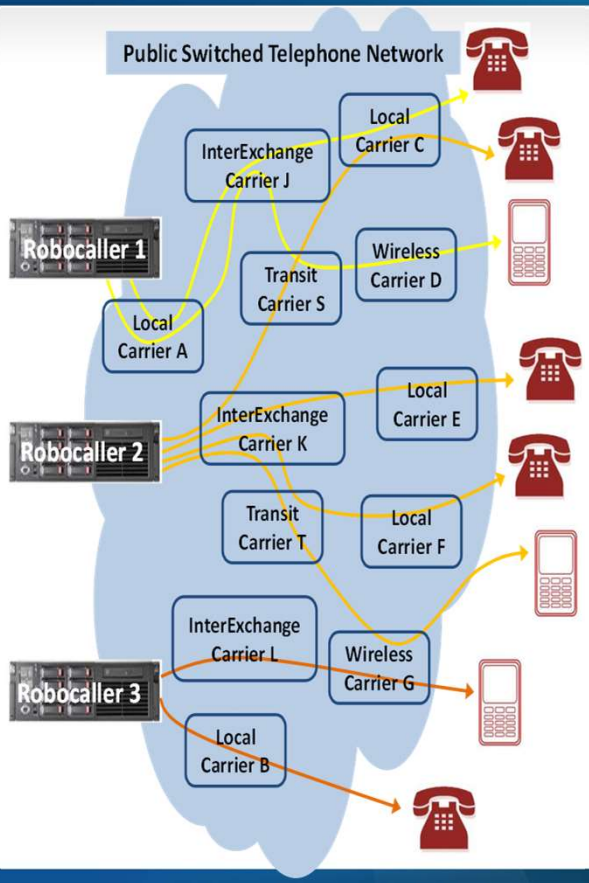
- Caller Name (CNAM) littered with garbage
  - Why is Jerusha's FCC phone number labeled 477047NZVE37A00?

How Will Robocallers React?

- When only a small fraction of their calls are blocked, the robocaller does nothing
- Once he notices that his calls are not going through, he'll adapt:
  - Move to a similar, but non-blocked number or number set (8YY-XXX-1040)
  - Build a list of valid NPA/NXX's and use those at random with random last 4
  - Build a list of government/university/hospital NPA/NXX's and use those
  - Continue with "neighbor" spoofing – use same (or same rate center) NPA/NXX as destination
- If there's a White List, robocallers will use numbers from that list
- These adaptations are relatively TRIVIAL for the mass robocallers

- If these blocking schemes won't scale, is the pain worth the gain?

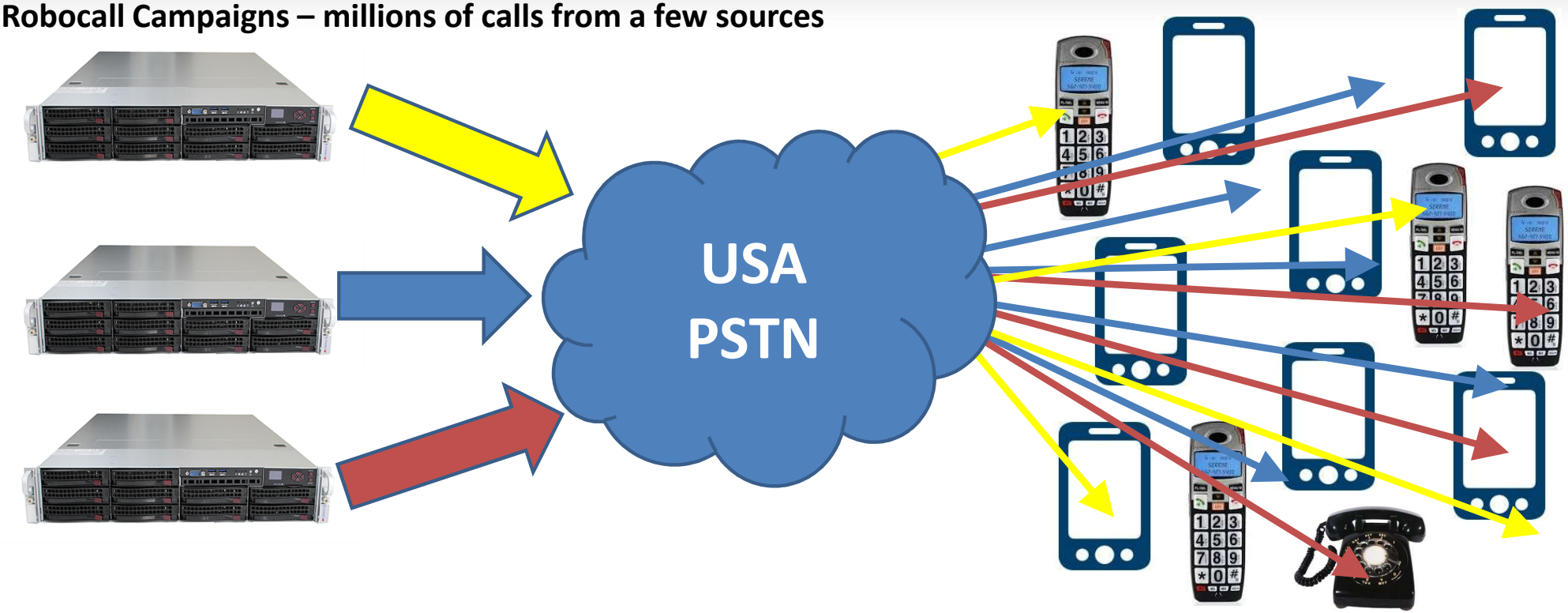
Why Is It So Hard To Stop Robocalls?



- Calls go through multiple hops to reach consumer phones
- When the call arrives at the destination, the path taken by the call is not available
- The Caller-ID is usually spoofed and there is no technical way today to stop that
- Caller-ID can (and does) change on a call-by-call basis so black-listing won't work
- Robocallers purposefully route their calls in obscure ways to make themselves harder to find
- Tracing a call backwards today takes weeks or longer
- By then, the robocaller has done his damage and moved on
- Often illegal, but the robocaller can't be caught so doesn't care
- We need timely end-to-end data to definitely map the problem

Robocalls = Dandelions

Robocall Campaigns – millions of calls from a few sources

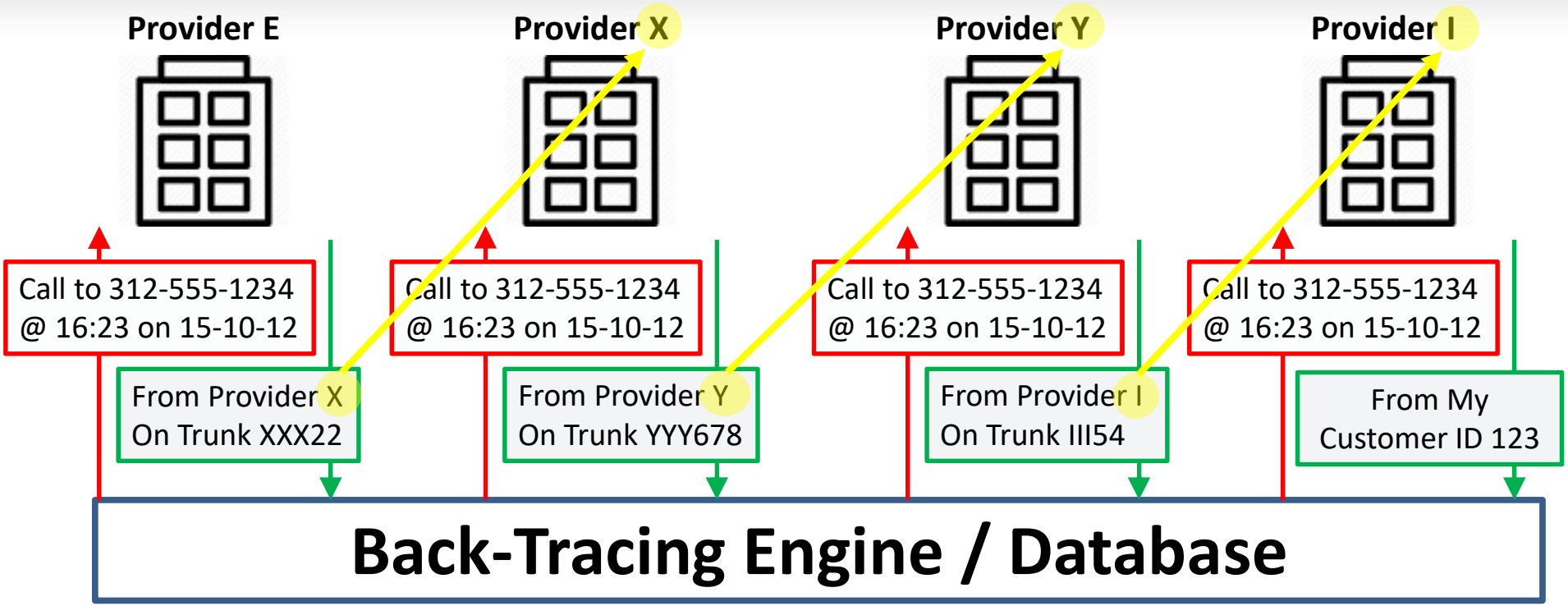


Hundreds of millions of endpoints needing protection

Proposal: Industry Robocall Clearinghouse

- Cross-correlation of abusive call examples (robocalls) across many sources
  - End user complaints, honeypots, carriers, blocking services
- Limited sharing of data among carriers
  - Carriers do not want to reveal upstream/downstream partners to competitors
- Pooling of resources and economies of scale
  - Individual providers need not maintain abuse contacts with all others
  - Common complaint intake and traceback analysis tools
- Better data protection than government-run database
  - Avoid nefarious FOIA-based requests
  - More complaint data available for our investigations
- Of all alternatives, Clearinghouse offers best R-O-I for near-term mitigation

Back-Tracing Process



FCC Support

- Require carriers to take proactive steps to mitigate robocalls:
  - Designate and publish to industry a point-of-contact for robocall issues
  - Respond promptly to bona fide industry requests for robocall traceback information
  - Monitor ingress trunks for abusive mass calling (next slide)
- Provide a mechanism at FCC to lean on those that aid and abet
  - Carriers that refuse to cooperate with traceback efforts
  - Providers offering unvetted CNAM manipulation & rebates, dialer decks, voice broadcasting
- Participate in drafting of new legislation if needed
- Foster cooperation with global counterparts

Ingress Carrier Possible Actions

- Carriers should audit their wholesale traffic, and should carefully scrutinize traffic when suspicions are raised.
  - Examine recent call history from the ingress trunk associated with call examples
  - Look at CallED and CallING number patterns; call durations and success ratios
- Depending on specifics, carrier can:
  - Contact customer and tell them to improve their behavior
  - Restrict (screen) CallING number(s) that can be used by that customer
  - Impose monetary penalties for short-duration and/or unanswered calls
  - Rate-limit calls from that customer
  - Terminate customer if traffic determined in violation of agreement (illegal calls)

Conclusions

- Unwanted Calls: Top complaint generator at the FCC and the FTC (perhaps the entire Federal Government?) for years, trending the wrong way
- Declare WAR; take no prisoners
- URGENTLY requires more concerted effort with more industry & regulatory muscle
- Must anticipate enemy reaction and strategize appropriately
- Engage all forces and tools at our disposal
  - Scouts, infantry, intelligence, etc.
- No draft dodgers, no deserters, no cowards

Discussion