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November 14, 2018

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

Re: NOTICE OF EX PARTE PRESENTATION OF TRANSACTION NETWORK SERVICES, INC.
CG Docket No. 17-59: *Advanced Methods to Target and Eliminate Unlawful Robocalls.*

Ms. Dortch:

On November 9, 2018, Paul Florack, Vice President of Product, and Lavinia Kennedy, Senior Product Manager, with Transaction Network Services, Inc. ("TNS")[1] met in person with Mark Stone, Deputy Bureau Chief; Daniel Margolis, Acting Legal Advisor; Kurt Schroeder, Chief, Consumer Policy Division; and simultaneously by phone with Jerusha Burnett, Attorney Advisor; Karen Schroeder, Attorney Advisor, and Kristi Thornton, Associate Division Chief, Consumer Policy Division of the Consumer and Governmental Affairs Bureau of the FCC. At our meeting we generally discussed TNS' Call Guardian solution for identifying and protecting consumers from robocalls. We discussed how TNS' Call Guardian robocall solution detects robocalls, how it detects neighbor spoofing, the methodology it uses to identify spoofed or hijacked numbers, and the data sources used by the Call Guardian solution, including crowd sourced feedback. We also discussed TNS' unique position in the industry as the largest independent inter-carrier call signaling and call routing provider to more than 400 wireless and wireline operators that allows TNS to analyze over 1 billion call events daily to gain insights into robocalling trends. TNS talked from the attached PowerPoint presentation that provides an overview of TNS' Call Guardian solution and summarizes key highlights of the 2018 Robocall Investigation Report that TNS recently concluded in November of 2018.

TNS also specifically discussed with FCC staff that based upon studies and analysis that it has recently completed, only approximately 34% of all inbound call traffic received by a typical carrier originates from a Tier 1 carrier committed to implementing the STIR/SHAKEN solution. The remaining 66% of inbound call traffic received by a typical carrier originates from over 400 other operators in North America, most of whom are customers of TNS' call signaling network. Because TNS is the signaling provider for most of those other 400 operators, TNS can provide

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[1] TNS is a leading global provider of data communications and interoperability solutions. TNS offers a broad range of network connectivity and innovative value-added services which enable transactions and the exchange of information in diverse industries such as telecommunications, payment processing, and financial services markets.

those operators with a pre-STIR/SHAKEN solution that authenticates calls originating from their networks as another method to help eliminate robocalls.

This *ex parte* notification is being filed electronically with your office pursuant to Section 1.1206 of the Commission's Rules. Please do not hesitate to contact me with any questions or concerns.

Sincerely,

Michael R. McCarthy
SVP, Assistant General Counsel
mmccarthy@tnsi.com
W 703-453-8314

attachment
cc (via email):   Mark Stone,FCC
                 Kurt Schroeder, FCC
                 Daniel Margolis, FCC
                 Jerusha Burnett, FCC
                 Karen Schroeder, FCC
                 Kristi Thornton, FCC

                 Paul Florack, TNS
                 Lavinia Kennedy, TNS

TNS - Call Guardian

2018 Robocall Investigation Report Highlights

November 9th, 2018

Paul Florack, VP Product Development
Lavinia Kennedy, Sr. Product Manager

Transaction Network Services

TNS – A Global Communications Company

Payment Services

- Leading global provider of payment services
- **Powers millions of ATM's and POS devices**
- Level 1 PCI DSS certified backbone network
- **Transports more than 22 billion payment transactions annually**

Telecom Services

- Largest independent SS7 network **delivering 100 billion messages monthly**
- Network Routing Directory for call routing - first ENUM registry for IP migration **delivering over 1.4 billion messages daily**
- Operates CCA's LTE hub
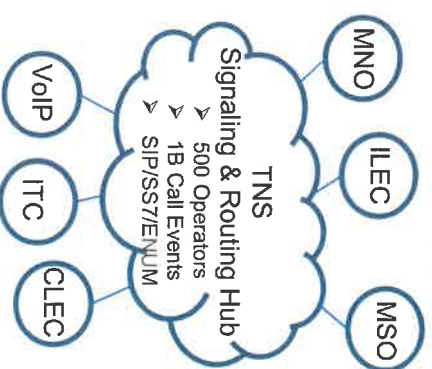- **Over 500 Carrier Partners**

Financial Services

- Low latency secure trading network services
- **Connects over 700 financial institutions worldwide**
- **Powering more than 2,000 end points** in the financial community

Transaction Network Services enables businesses, people, and markets to connect, transact, and trade with each other securely and reliably.

Transaction Network Services

Uniquely Positioned to Improve the Call Experience

Transaction Network Services

Network Integration

Signaling Events

Network Interoperability

Treatment & Routing

Call Authentication Hub

TNS
Signaling & Routing Hub
- 500 Operators
- 1B Call Events
- SIP/SS7/ENUM

MNO · ILEC · MSO · CLEC · ITC · VoIP

Enhanced Call Experience

Federated Data Sources

Identification
- Person, Business & Category

Reputation
- Risk Level & Category

Enriched Experiences
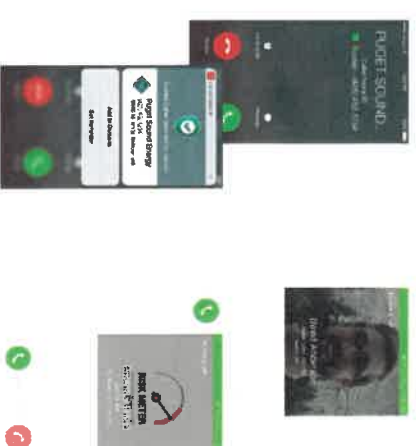
Android & iPhone

Pre-Loaded, Downloaded & SDKs

Enriched identification

Post Call Actions

Marketing Engagement

2018 Robocall Investigation Report Highlights

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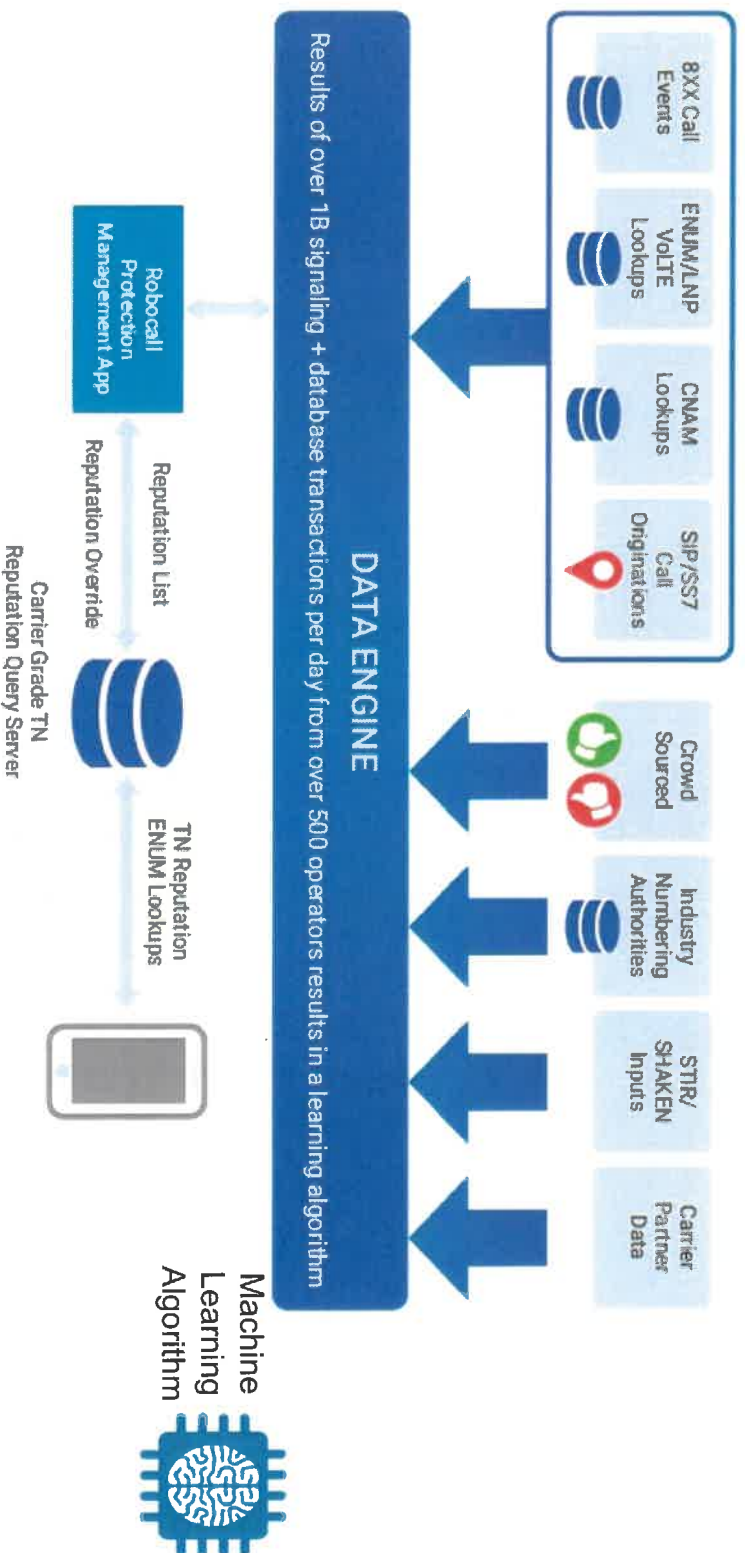
TNS Unique Insight and Call Guardian

- **TNS' unique position in the industry** as the largest independent inter-carrier signaling, and call routing provider gives it unequalled insight into the nuisance caller problem

  - Analyze over *1 Billion call events daily across over 400 operators* (largest to smallest across all segments)

  - Call event data is *processed in seconds*, allowing for detection of per call spoofing (e.g. neighbor spoofing)

  - Insights and reporting provides operators with *tools to address dispute resolution* and manage call filtering services

- These insights and capabilities, combined with innovative mobile client applications, are why TNS robocall solutions have been deployed at *3 of the top 5 wireless service providers*

- *Industry recognition in 2018:*

  - MindCommerce Study: TNS proven to be top solution for accuracy and identification of problematic telephone numbers

  - FierceWireless Innovation Awards: TNS' Enhanced Caller ID won in the Customer Engagement category

- In November TNS released the **2018 Robocall Investigation Report**

Transaction Network Services

Methodology

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8XX Call Events

ENUM/LNP VoLTE Lookups

CNAM Lookups

SIP/SS7 Call Originations

Crowd Sourced

Industry Numbering Authorities

STIR/ SHAKEN Inputs

Carrier Partner Data

DATA ENGINE

Results of over 1B signaling + database transactions per day from over 500 operators results in a learning algorithm

Robocall Protection Management App

Reputation List

Reputation Override

Carrier Grade TN Reputation Query Server

TN Reputation ENUM Lookups

Machine Learning Algorithm

- **Nearly one-third of calls are either high risk or nuisance.** Negative calls are evenly split between nuisance calls and high-risk calls, and the rate of negative calling to landline subscribers is more than double wireless subscribers.

- **Negative call activity continued to increase over the last eight months.** Negative call activity has risen almost 15% through the first 8 months of the year.

- **Robocall user feedback has nearly doubled.** Growing consumer frustration with robocalls has translated into users more proactively providing feedback, predominantly reporting spam, scam, or telemarketing calls.

- **Neighbor spoofing has emerged as a preferred tactic.** Robocall scammers believe users are more likely to answer the phone if the caller ID shows a familiar number.

- **Real-time analytics is the key to identifying spoofed call activity.** Advanced machine learning methods for labelling negatively scored robocalls using real-time artificial intelligence in combination with big data gleaned from the network effectively addresses the constantly changing identities of robocallers.

- **VoIP numbers used heavily by robocallers.** 50% of the high risk/nuisance calls originate from VoIP numbers.

- **Robocallers doubling down on invalid numbers.** The use of invalid numbers (such as those with area codes that don't exist) continues to rise, doubling over the first six months of the year.
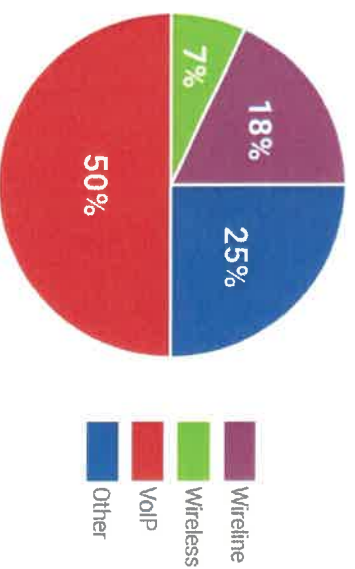
Call Distribution by Positive and Negative

- 16% Positive
- 16% Nuisance
- 67% High Risk Robocalls
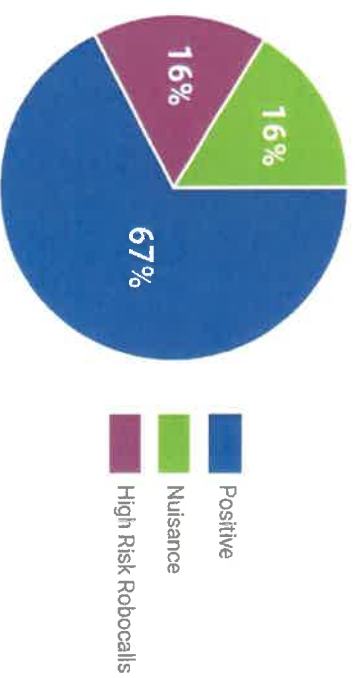
One-Third of Calls are High-Risk Nuisance

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VoIP TNs Generated 50% of Negatively Scored Calls by Total Volume

Negatively Scored Calls

- Wireline
- Wireless
- VoIP
- Other

50%

25%

18%

7%

Negative Call Activity has Risen 15% this Year

Negative Call Activity Continues to Grow

Total Volume of Negative Calls

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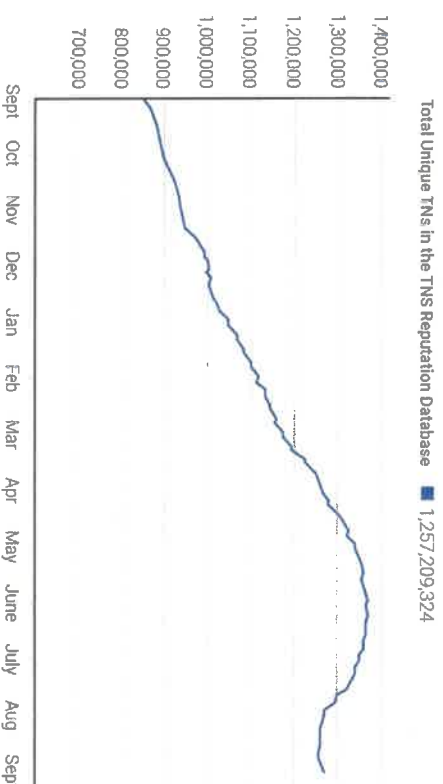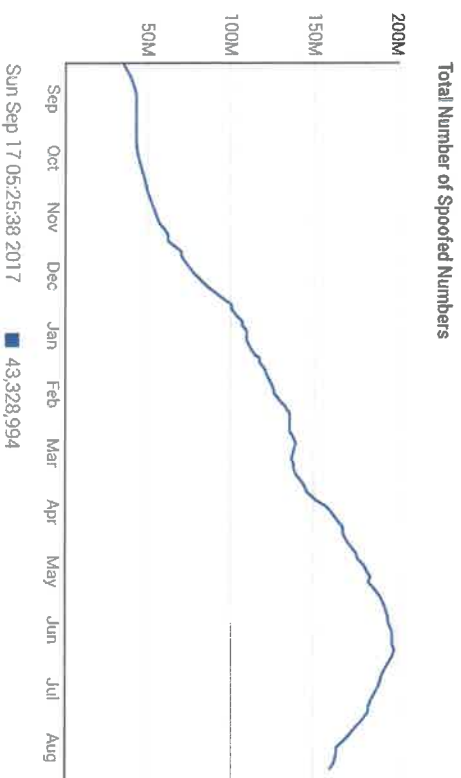
Robocallers Churn Through Invalid Numbers

Total Number of Spoofed Numbers

Sun Sep 17 05:25:38 2017 ■ 43,328,994

Total Unique TNs in the TNS Reputation Database ■ 1,257,209,324

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Crowd-Source Statistics by Category

Crowd Source by Volume

Jan Feb Mar Apr May Jun

- Scam-fraud
- Telemarketer-sales
- Spam
- Survey
- Debtcollector
- Other
- Hangup-deadair
- Fundraiser-charity

Crowd Source Statistics by Category

4%
14%
22%
57%

- Scam-fraud
- Telemarketer-sales
- Spam
- Survey
- Debtcollector
- Other
- Hangup-deadair
- Fundraiser-charity

Robocall User Feedback has Nearly Doubled

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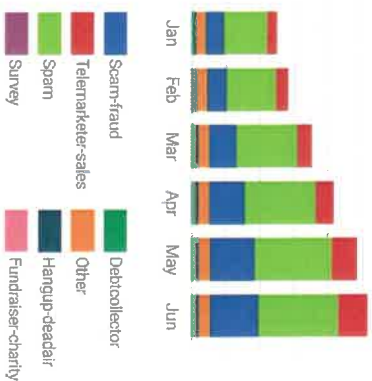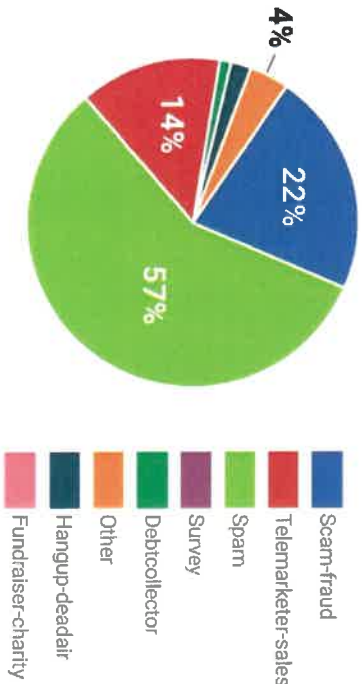
Neighbor Spoofing Emerged as a Preferred Tactic

Neighbor Spoofing based on Crowd Source Data

Month	Telemarketer-sales	Spam	Scam-fraud	Other
Jan	13%	57%	19%	11%
Feb	13%	59%	20%	8%
Mar	13%	58%	21%	8%
Apr	14%	57%	22%	7%
May	16%	57%	22%	5%
Jun	16%	56%	23%	5%

Telemarketer-sales
Spam
Scam-fraud
Other, including:
- Debt Collector
- Survey
- Hangup-Deadair
- Fundraiser-Charity

**Transaction
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Other Observations & Trends

- Carrier Level Blocking of FCC allowed numbers
  - Low level of carrier initiated blocking
  - Major wireless providers choosing to alert subscriber who may then elect to block

- Improved Tools for Legitimate Call Originators

Call Volume & Reputation History

- Call Authentication Hub
  - Integrating SHAKEN/STIR