

THE INDUSTRY

How have technological changes affected the telecommunications industry, including entities that want to make automated calls?

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The Transition from POTS to Broadband

Kevin G. Rupy

Senior Director, Policy Development

USTelecom

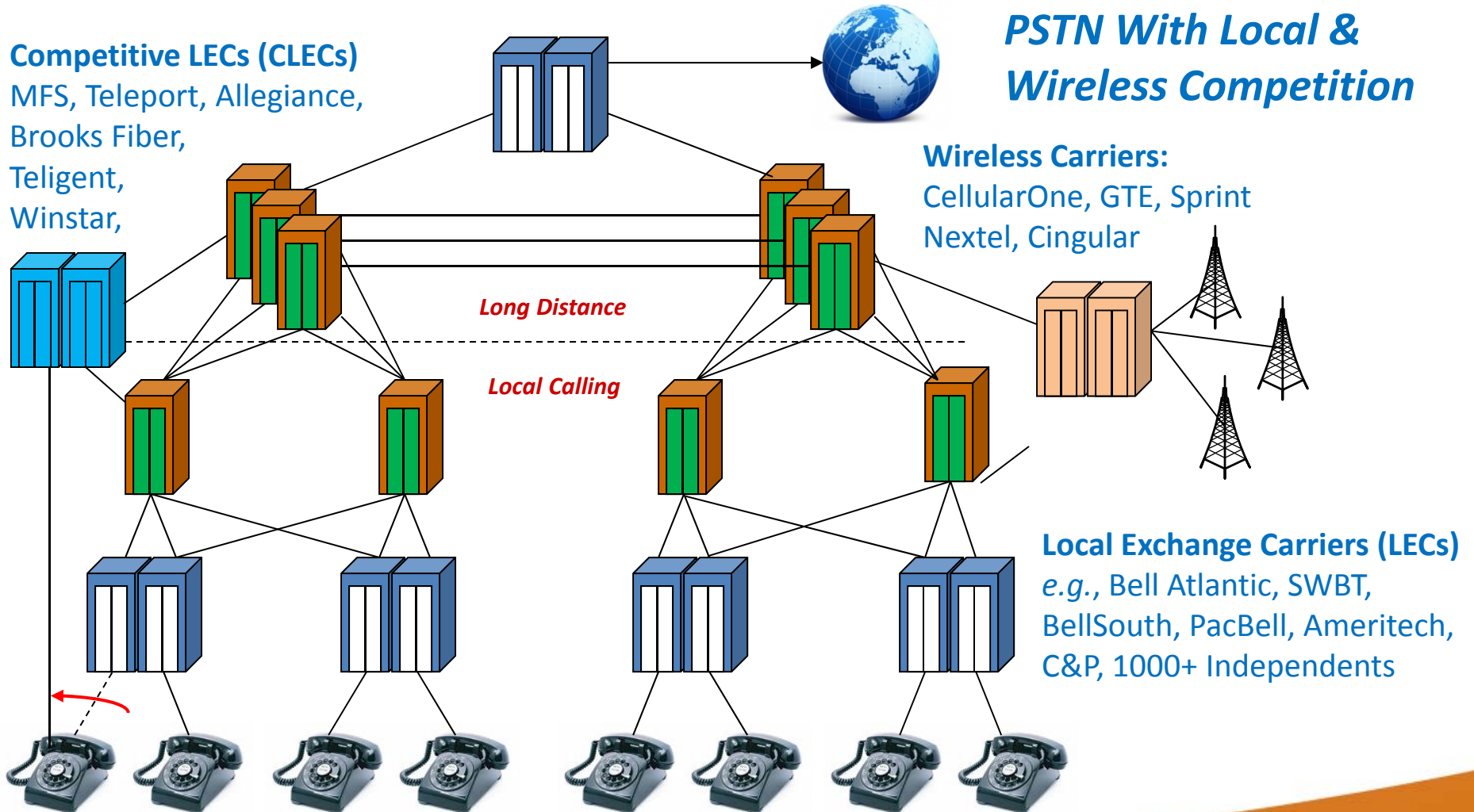


Introduction

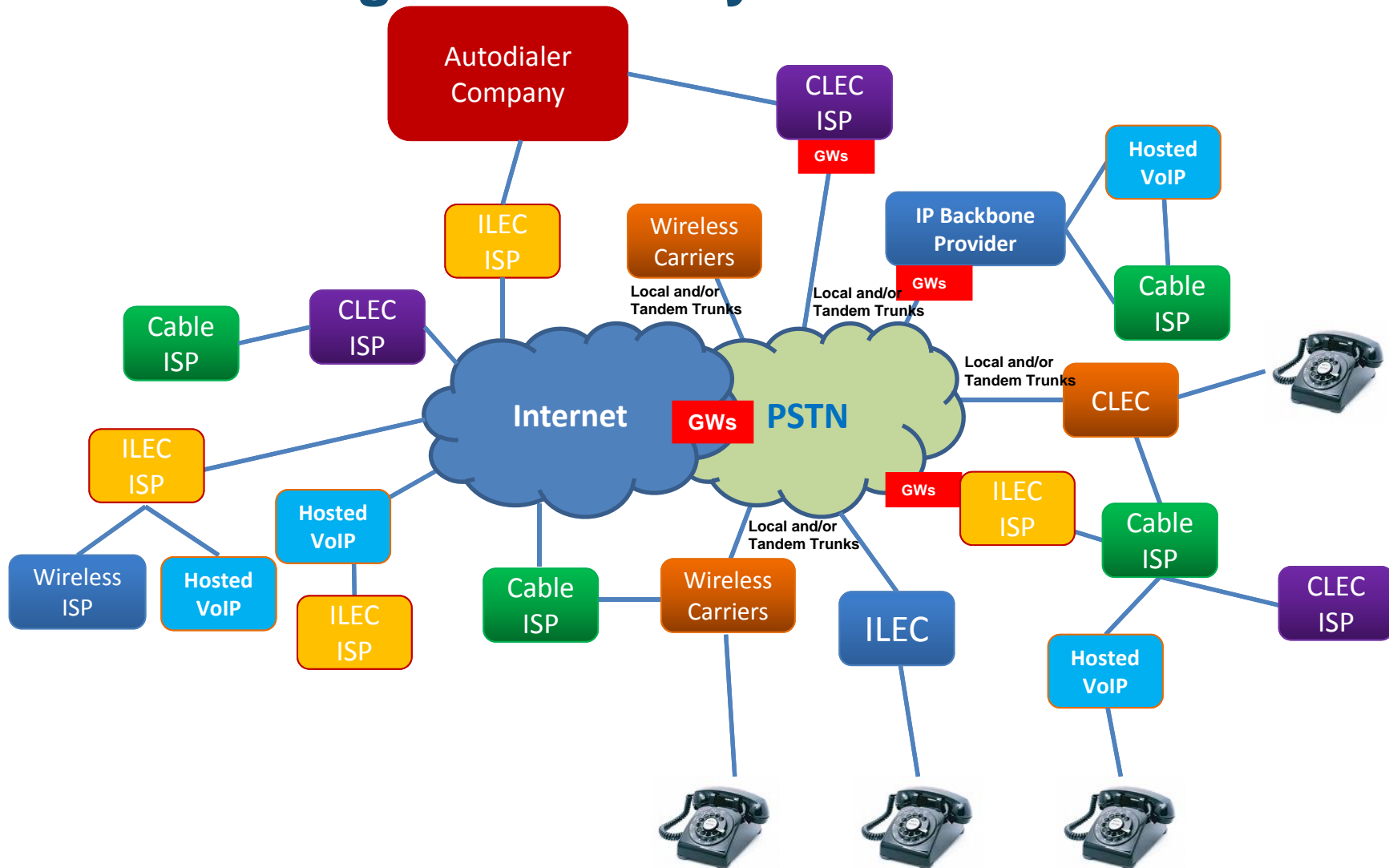
- How the network has changed
- What robocalls are
- What carriers are doing

Traditional Circuit Switched Network Post '96 Act

PSTN With Local & Wireless Competition



The Evolving Voice Ecosystem.



Stakeholders in the Robocall Environment

Voice Over Internet Protocol Providers (VOIPs):

- **Over the Top VOIP:** Skype, Google Voice, Magic Jack, Ooma.
- **Interconnected VOIP:** Vonage, Cable VOIP.

Local Exchange Carriers (LECs):

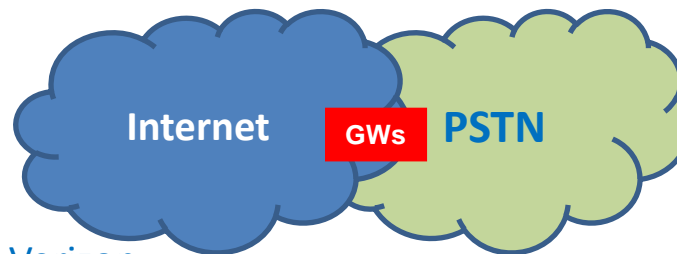
- **ILECs:** AT&T, Verizon, CenturyLink, Independents (x100s)
- **CLECs:** Level 3, XO Communications, Cablevision/LightPath, Independents (x100s).
- **Wireless:** T-Mobile, AT&T, Verizon Wireless, Independents (~100).

Autodialer Companies:

- **Software:** VanillaSoft, SpitFire, AutoDialerPlus,
- **Services:** Call Em All, CallFire, Database Systems Corp, Impact Dialing.
- **Equipment:** PowerVoice, PhoneTree, BigmOuth, Goldmine.

Internet Service Providers (ISPs):

- **Telcos:** AT&T, Verizon, CenturyLink, Independents (x100s)
- **Cable:** Comcast, Cablevision, Time Warner, Independents (x100s)
- **Wireless:** Sprint, T-Mobile, ClearWire, WISPs (x100s)

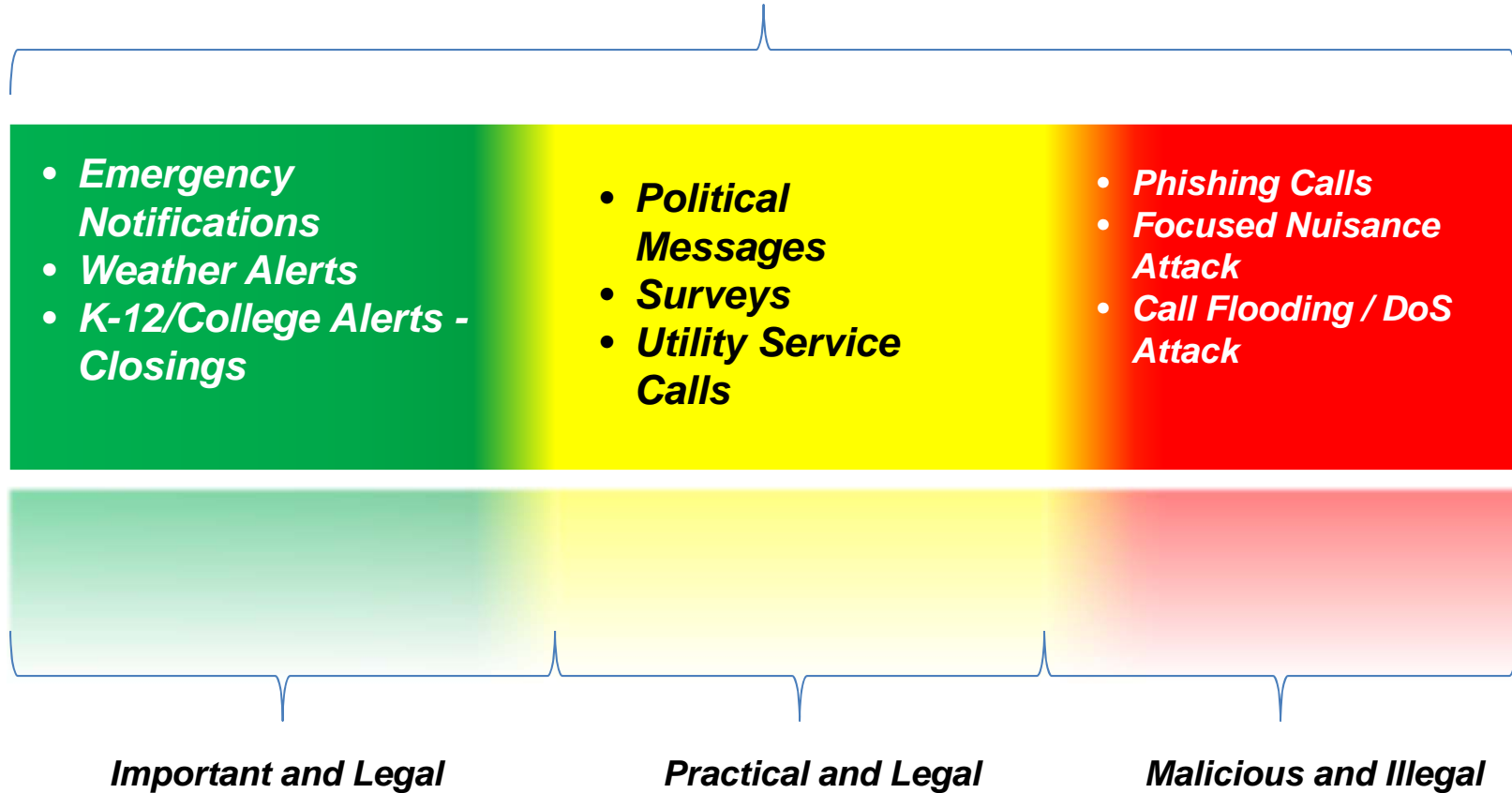


Robocall Customers:

- **Government:** Public Safety, Schools, Local Governments.
- **Politicians:** Elected officials, political candidates.
- **Business:** Any business from Auto Shops to Zoos.

The Full Spectrum of Mass-Calling Events

All Mass-Calling & Robo-Call Events

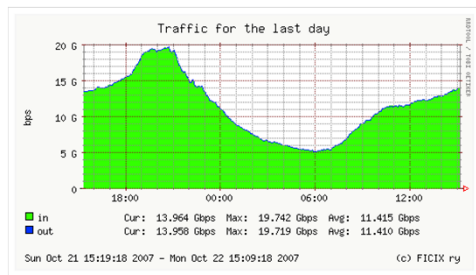


Different Perspectives of Mass-Calling Events

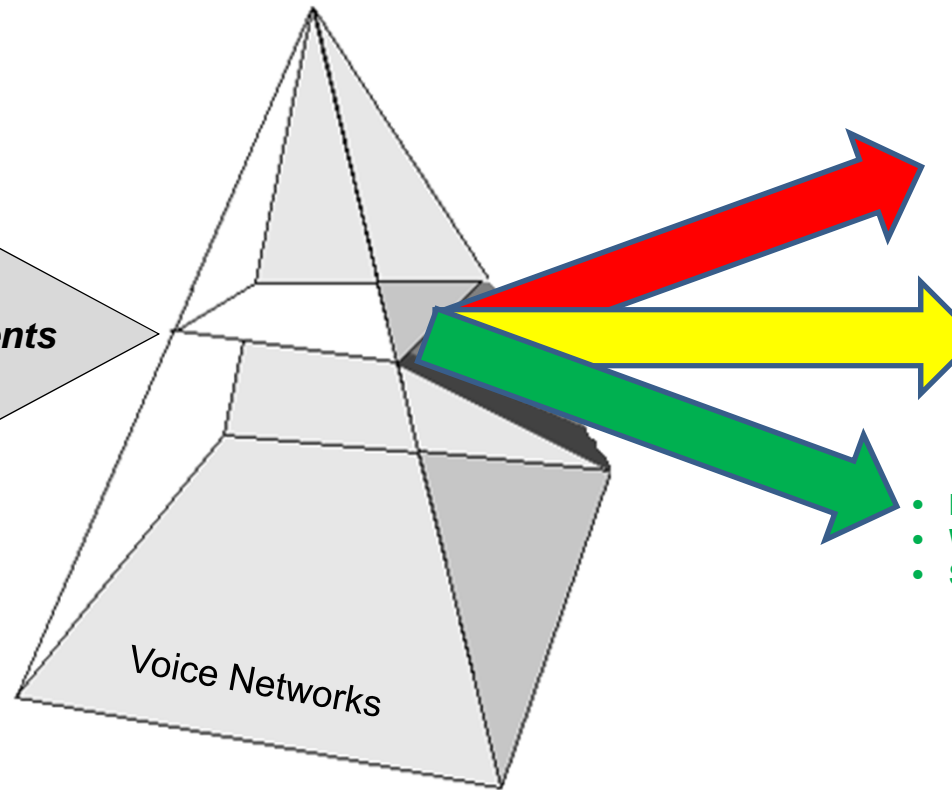
What Service Providers See



All Mass Calling Events



What Consumers See



- Phishing Calls
- Focused Nuisance Attack
- Call Flooding / DoS Attack

- Political Messages
- Surveys
- Utility Service Calls

- Emergency Notifications
- Weather Alerts
- School Closing Alerts

Current Activities

- Network Operations Centers
 - Security Desks
 - Traffic data forensics
 - Mass calling investigations
 - Blocking specific numbers
- Legal Actions
 - State court actions
 - Law enforcement coordination
- Working/Standards Group Frameworks
 - Alliance for Telecommunications Industry Solutions (ATIS)
 - Internet Corporation for Assigned Names and Numbers
- Consumer Education

Legal/Practical Limitations

- Legal Limitations
 - Privacy Laws
 - Common Carrier Obligations
- Technological arms race

David Diggs

Vice President

**Wireless Internet Development
CTIA – The Wireless Association**



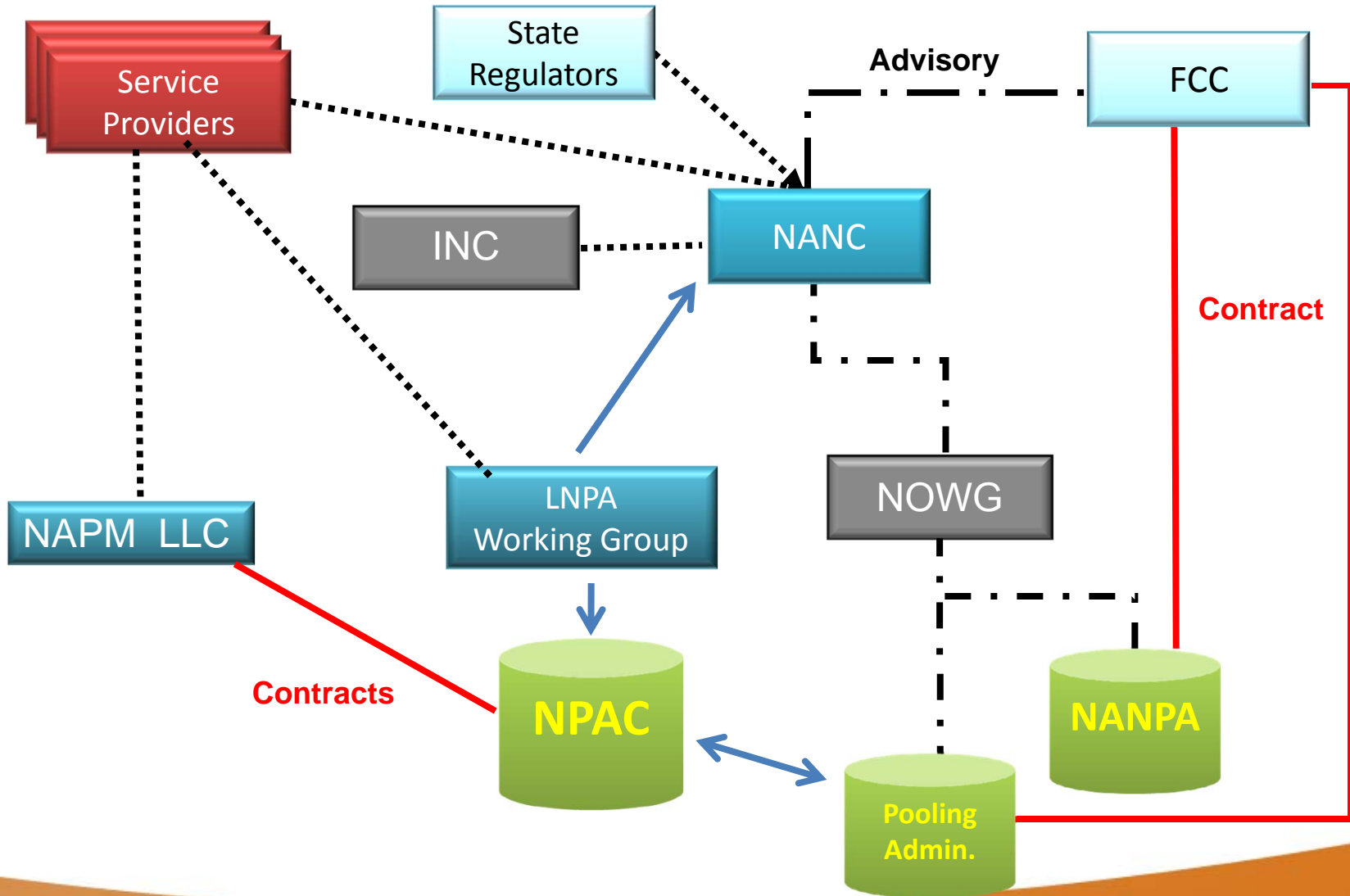
Wireless is Different

- Landline vs. mobile pricing regimes differ
- TCPA prohibits all robocalls except:
 - Emergency purposes
 - Prior express consent of called party
- No exemption for political, charitable

Challenges of IP-based

- Telco vs. internet “culture”
- Identifying origin of traffic
 - Resellers of TNs
 - Competing solutions for identifying “owner” of TN
- Blocking less effective
 - Volatility
 - Spoofing

Telephone Numbering Resources: Who's In Charge?



Brad Herrmann

**Founder and President
Call-Em-All**



Robocalling Evolution

“Old School” Robocalling

- Capital Intensive (specialized equipment and lines/ports)
- Specialized programming skills
- Lead Time: 60-90 days

VOIP Robocalling

- No special equipment
- Requires large bandwidth connection
- Easier software development
- Lead Time: Days

Cloud Services Robocalling

- Basic internet connection
- Immediate & simple call initiation (via web or API/web services)
- Lead Time: Hours

Stopping Unwanted Calls – One example

- 1) Message review by empowered employees
 - Listen to message and approve/reject
 - Call client & ask questions
 - Call the CallerID number
- 2) Maintain client-specific DNC list
- 3) Monitor opt-outs