

A woman with curly hair, wearing a purple shirt and blue jeans, is smiling and holding up her smartphone to take a photo. She is standing in a grassy field next to a light blue van. In the foreground, the back of a person wearing a green and blue striped polo shirt is visible. The background shows a clear sky and some trees.

# IP Interconnection

National Conference of Regulatory Attorneys – May 21, 2012

 T-Mobile®

# IP Interconnection Promotes Efficiencies

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- Facilitating a seamless transition from current TDM interconnection framework to IP Interconnection for voice traffic is pro-competitive and pro-consumer
  - TDM interconnection and the thousands upon thousands of points of interconnections (POIs) it entails is a product of legacy network limitations that reflect outdated and inefficient network design
    - ILECs placed end office switching centers near end users because of the limitations of legacy copper infrastructure – the further a call traveled from the central office, the more voice quality degraded over copper facilities
      - ILECs have been replacing interoffice infrastructure with fiber interoffice transport since the 1980s
      - ILECs have been pushing fiber deeper into their local loop infrastructure since the 1990s
    - ILECs placement of tandem switches to aggregate traffic from multiple end offices was also driven by infrastructure limitations that no longer exist as fiber has replaced copper in that realm as well
  - TDM interconnection allows ILECs to force competitors to deliver traffic deep into their legacy wireline network and impose cost inefficiencies on competitors to the benefit of ILECs
    - Competitive providers (wireless, wireline CLEC, cable) have to pay a variety of non-recurring and recurring charges for each POI
      - Inefficient costs imposed on competitive providers are multiplied when an ILEC has multiple entities operating in a LATA and insists on separate POIs for each ILEC entity.
    - Each POI requires the interconnecting parties to have their own equipment to exchange traffic, all of which use energy to operate

# IP Interconnection Promotes Efficiencies

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- TDM interconnection affords relatively little or no redundancy
  - Dependence on ILEC tandems for most traffic flow precludes alternative back up routing
    - Although alternative transport providers exist in some markets, TDM interconnection and the current rules governing interconnection forces alternative transport providers to replicate the inefficient design of the legacy ILEC architecture
- TDM interconnection is less secure
  - Despite tens of thousands POIs, most traffic transits ILEC tandems that constitute a single point of failure that can cause the traffic flow for an entire LATA to be disrupted if a tandem fails
- TDM interconnection is inherently subject to an increased risk for service outages
  - Every POI is a potential point of failure. Limiting the number of POIs enhances service quality by reducing the potential for outages
- TDM interconnection degrades service quality for consumers of VoIP services
  - VoIP based service is able to provide features for end users that are unavailable with circuit-based services. Some features are “lost” because of the conversion of packetized traffic into TDM format for traffic exchange purposes

# IP Interconnection – Facilitating The Transition

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- The overarching goal for regulators and the industry should be to transition the PSTN to an all-IP network that more closely resembles an Internet Modeled Network, which has a limited number of regional Points of IP interconnection
  - The Internet has just 32 “Internet Exchange Points” (IXPs) in the US
- Regional IP POIs should preferably be at neutral sites to avoid enabling any carrier to have bottleneck control over access to a Regional POI
- FCC should set a timeline for indentifying regional IP POIs (T-Mobile suggested by year end 2012 in its comments)
- The FCC should set a deadline for all carriers to accept traffic at regional IP POIs
  - E.g., July 2018 - the same timeline as the FCC envisions for the ICC rate transition for price cap carriers
- Neutral IP Regional POIs would become common network edges for the entire industry at which time all traffic would be exchanged and terminated using a Bill & Keep (B&K) regime as contemplated by the FCC’s reform of Intercarrier Compensation

# IP Interconnection – Facilitating The Transition

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- With those end point goals in mind, there are important interim regulatory steps that should be implemented in the near term to facilitate the industry's move to IP interconnection over a reasonable time period
  - Interim measures are necessary to limit carriers' ability to obstruct or delay the IP transition by adding unnecessary costs to the exchange or delivery of IP voice calls
  - PSTN will not automatically transition to an Internet architecture model in absence of interim measures

# IP Interconnection – Interim Measures

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- Preclude ILECs from using affiliates to avoid IP interconnection by capping POIs at one per state for each corporate parent that has multiple operating LECs in a given state
- Require all carriers that have deployed an IP network (whether that be a LEC's own network or that of an affiliate) to enter into IP interconnection arrangements with all requesting carriers
  - All calls should be handed off to receiving carriers at one of the regional POIs on a settlement free basis
- Clarify that ILECs have the burden to prove they are engaged in “good faith” negotiations
- Facilitate speedy dispute resolution for interconnection disputes
  - Resolve interconnection disputes through informal complaints or the Enforcement Bureau's Accelerated Docket and mediation procedures
    - Pre-complaint mediation is a useful vehicle to ensure that ILECs are negotiating in good faith

# IP Interconnection – Cost-Based Rates Will Remain An Essential Component in the Interim and Long Term

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- Interconnection services and facilities not covered by the ICC transition should be established by the Section 251/252 process
  - Allowing LECs to tariff rates, terms and conditions for interconnection places too much power in the hands of the tariffing LEC
- Interconnection facilities must be provided at cost-based TELRIC rates
- Transit service supporting indirect interconnection must be provided at cost-based TELRIC rules
- Because non-cost based rates allow ILECs to charge excessive rates, IP interconnection agreements cannot be negotiated on a commercial basis
  - History repeatedly demonstrates that ILECs dramatically increase prices for network services and elements once they achieve deregulation