

Simplifying
the exchange of Digital Communications
in a Converging World

Voice Peering
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Arbinet manages the complexity of voice termination

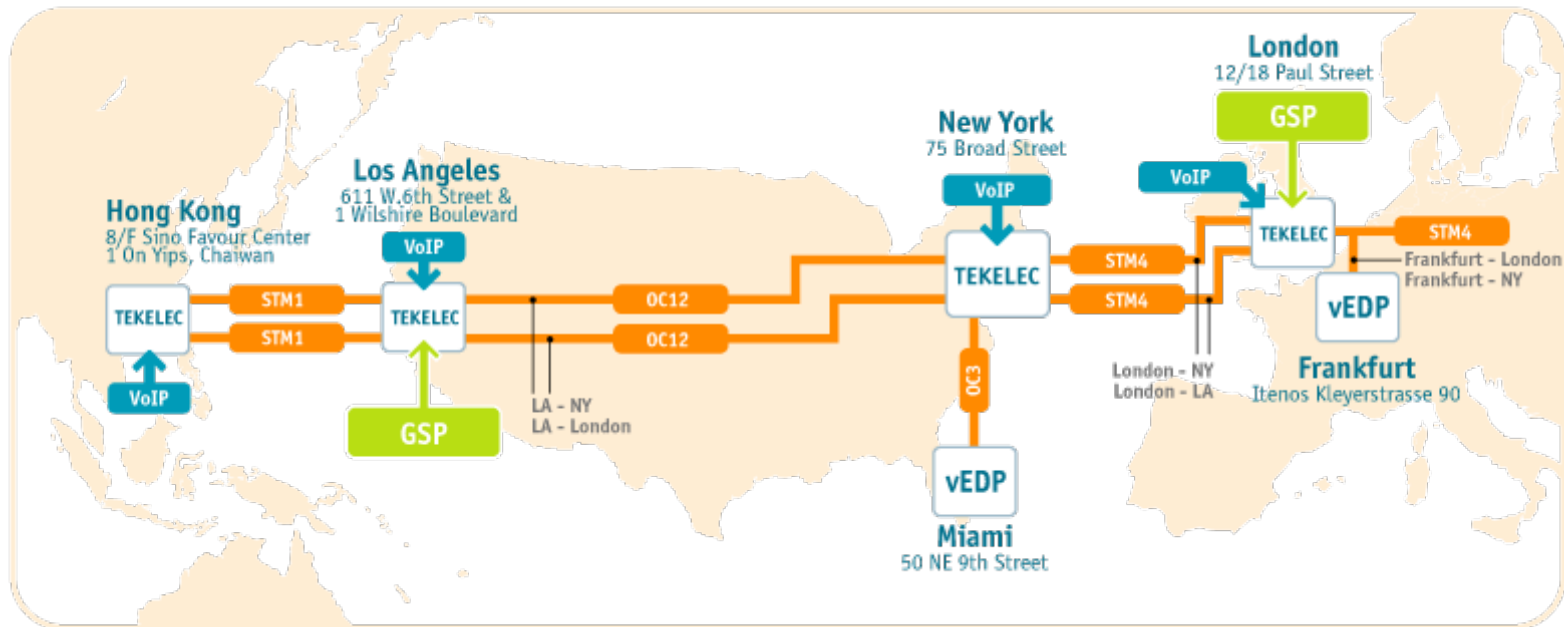
- Integrated voice termination service provider
- World-leading peering community offering global registry services
 - Direct routing to 90 service providers serving 325M+ customers in 52 countries
- Quality A-Z termination using Tier One providers
 - No term commitments
 - Single consolidated invoice/payment
- Integration of private commercial and reciprocal arrangements
- Automatic number and SMS/MMS portability correction

Blue Chip Customers Worldwide

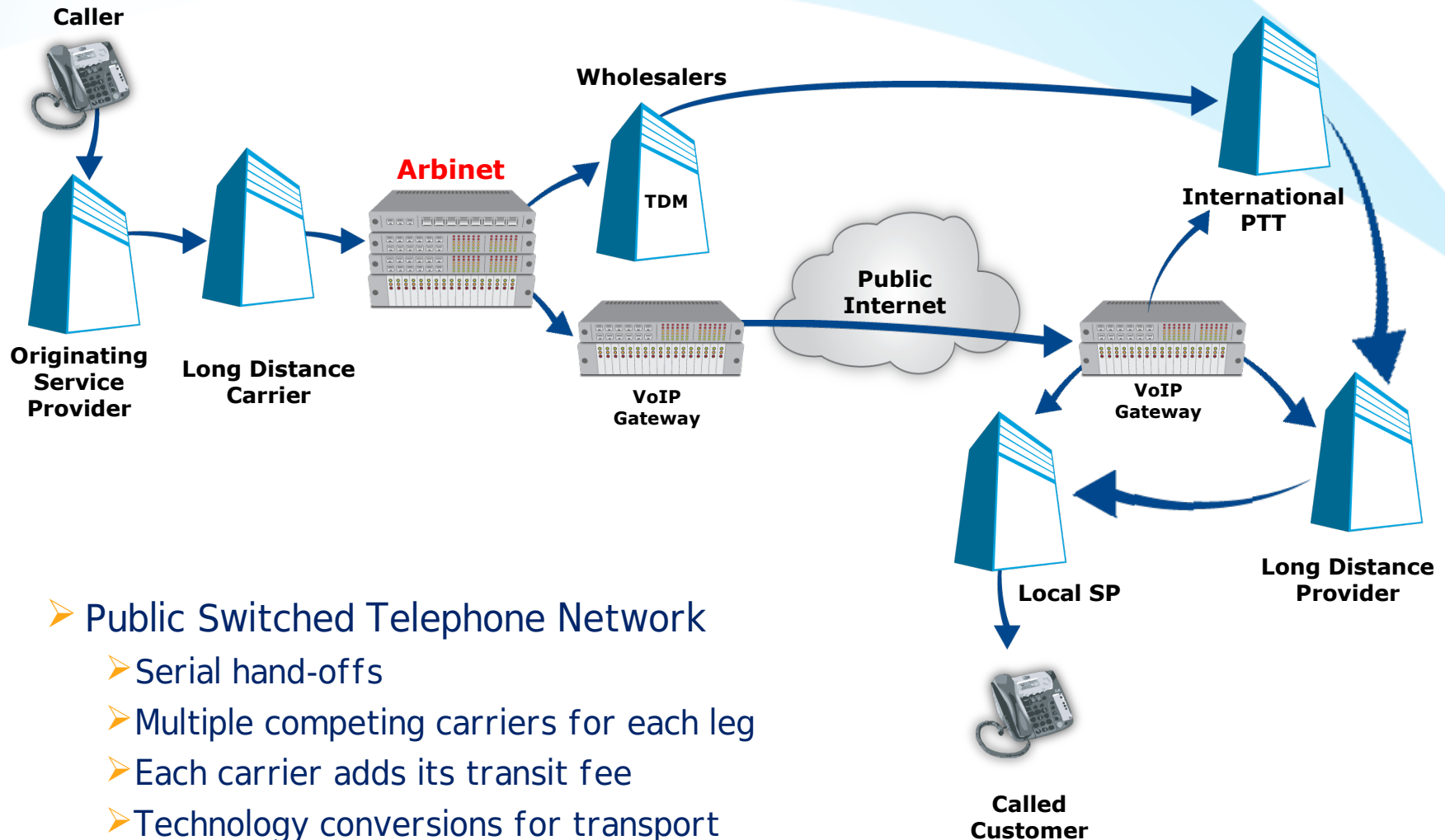


Arbinet's Network Reaches Around the Globe

- 925+ Voice Service Providers connect to any site using TDM and/or VoIP
- Arbinet routes traffic between “buyer” and “seller” across its backbone



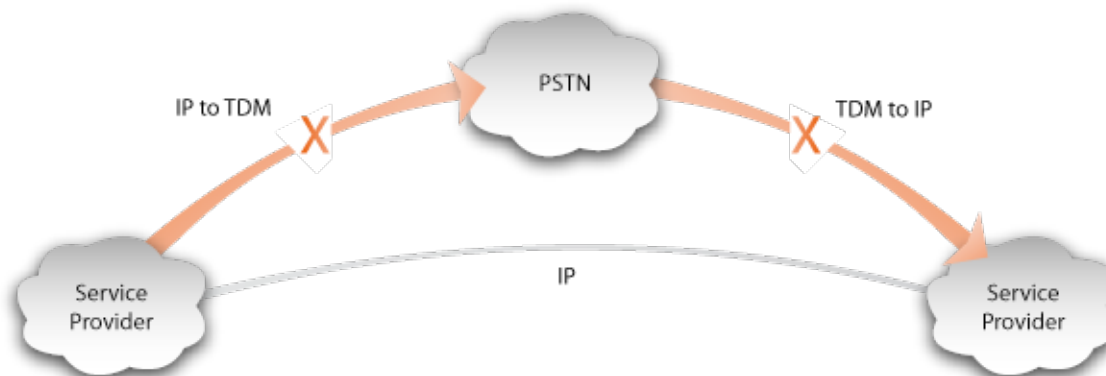
Legacy Telephony Interconnections are Complex and Expensive



- Public Switched Telephone Network
 - Serial hand-offs
 - Multiple competing carriers for each leg
 - Each carrier adds its transit fee
 - Technology conversions for transport

VoIP Peering as an Alternative to the PSTN

- VoIP Peering – the interconnection between two service providers for the completion of a seamless session between subscribers on their networks
 - Enabling Solutions Providers may provide transmission, switching, database, settlement, or other services to facilitate the session
- The benefits are:
 - Improved call quality
 - Lower costs
 - New services



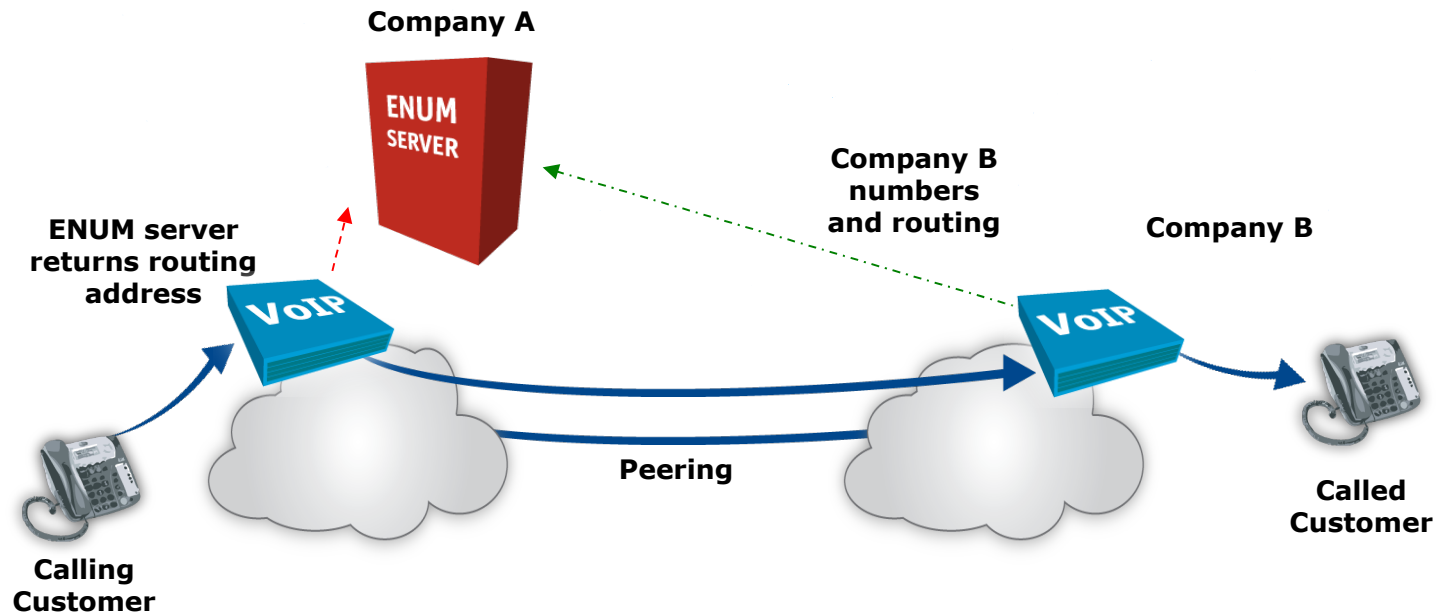
Why is so little VoIP Peering taking place?

- Few calls will route between VoIP partners
 - For example, if 10% of US customers are VoIP end users
 - % of US traffic that is VoIP to VoIP: 10% of 10% = 1%

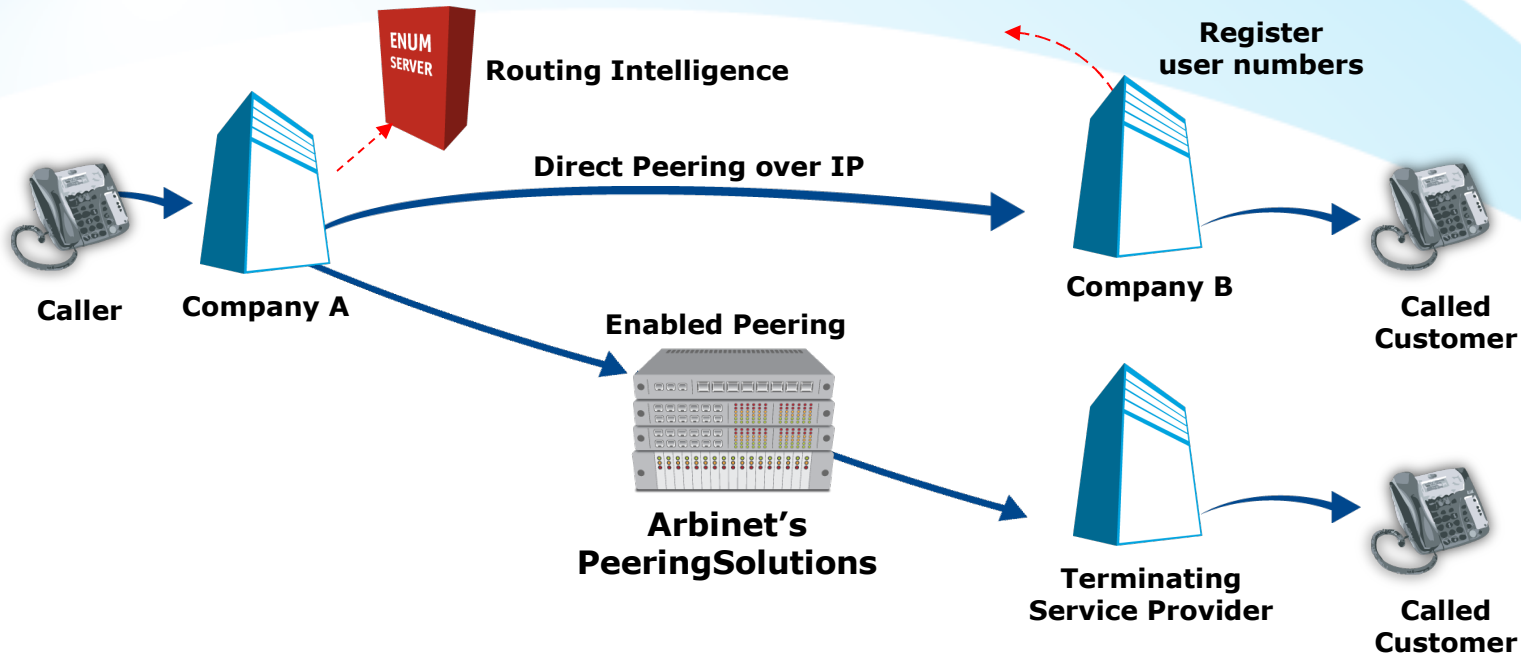
- It's hard work
 - Identify all peering partners
 - Agree upon a commercial relationship
 - Agree upon IP addresses to interconnect
 - Agree upon private or public Internet transport
 - Exchange and update numbers with all your partners
 - Query all outgoing calls against an ENUM-like server
 - Bill and settle for termination, when required

How Does Peering Work in General Terms?

- Company B shares telephone numbers and routing information
- Company A loads information into an ENUM transaction server
- Company A outgoing calls are queried for matches to Company B numbers
- Successful matches provide the routing information
- Calls are routed for termination

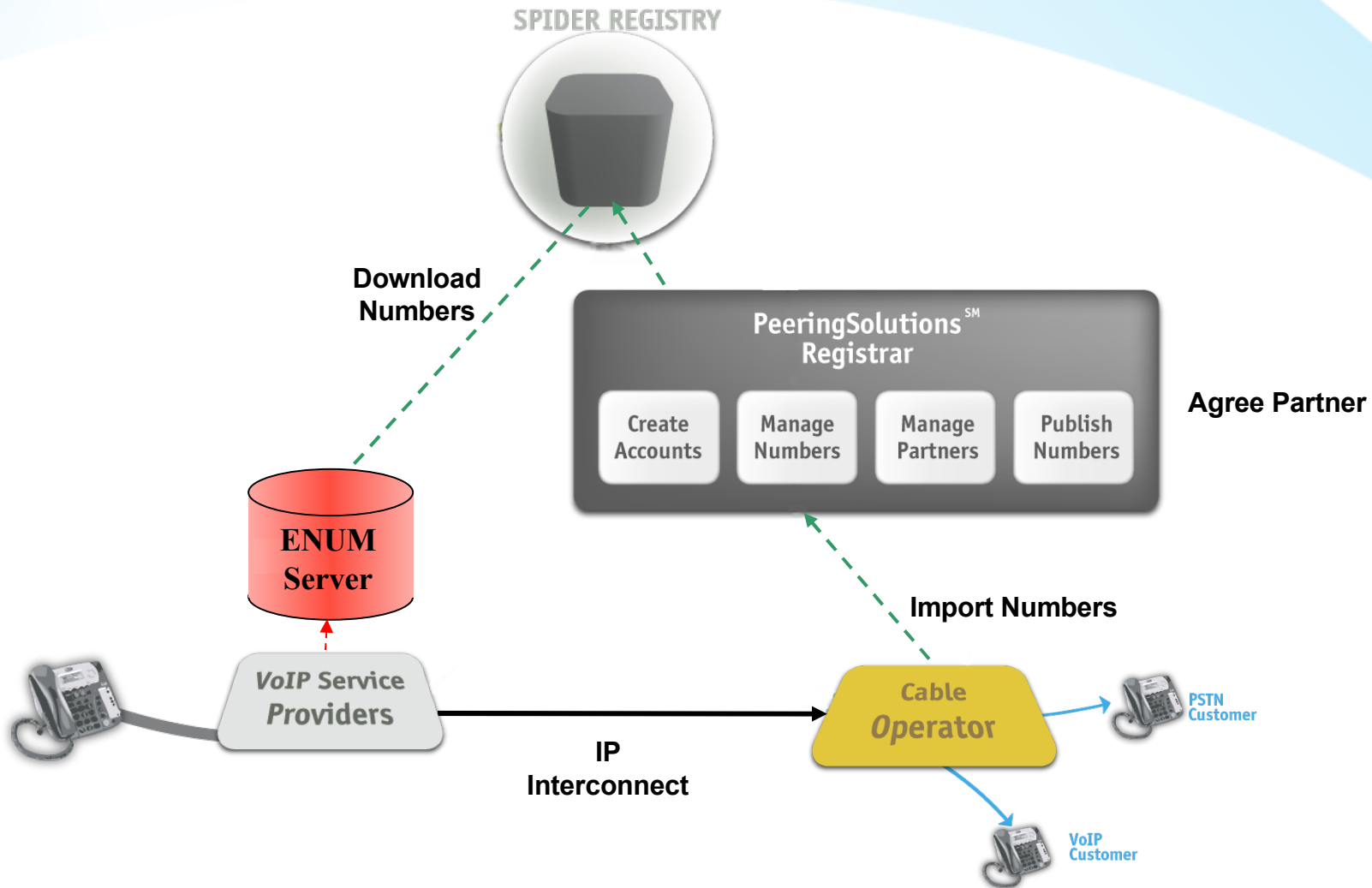


Revisiting Telephony Interconnections Using Peering

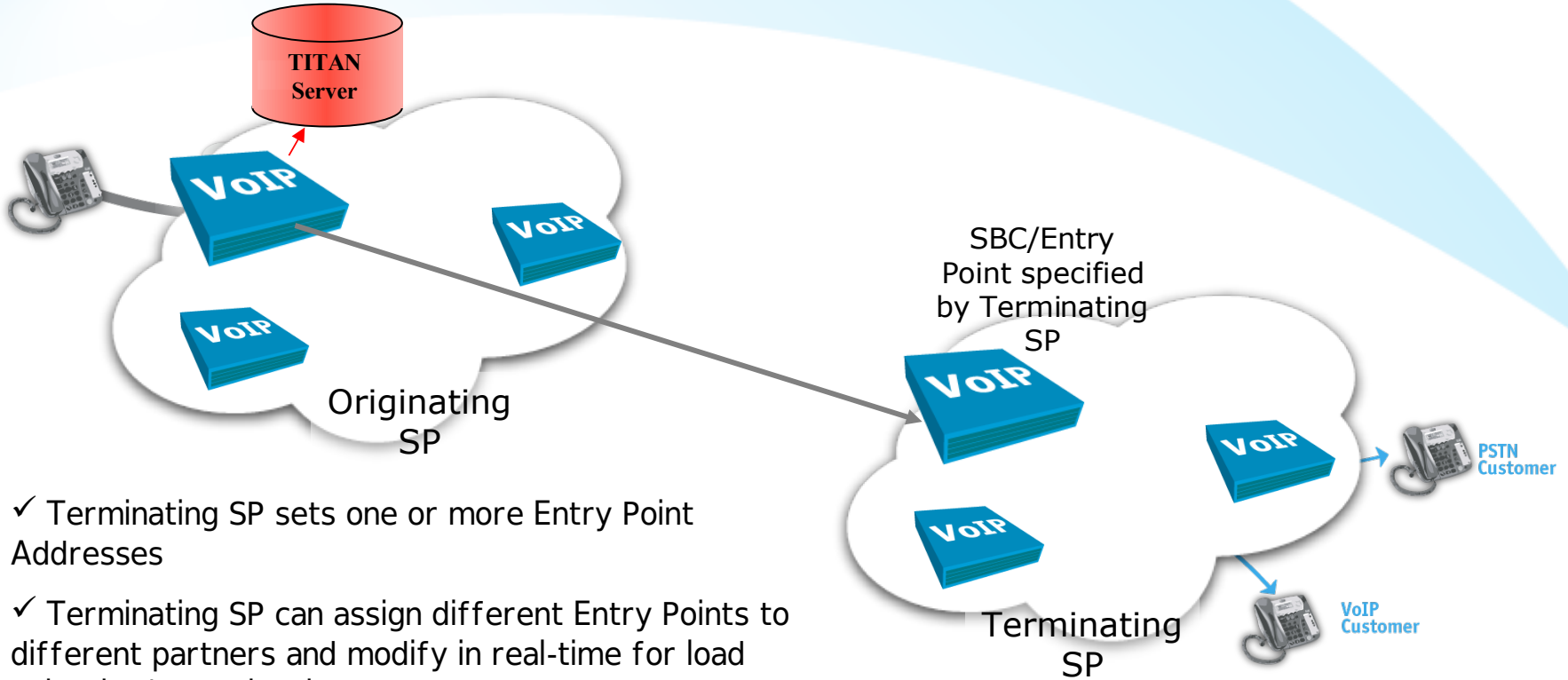


- Originating entity connects directly to its key partners
- Peering Enabler handles smaller partners and PSTN destinations
- Peering Enabler provides security, transport, settlement (as required)
- PSTN Commercial terms reduced to termination charge plus transit fee
- PeeringSolutions – Arbinet's global peering community of 325M end-customers

PeeringSolutions – Direct Bilateral Peering

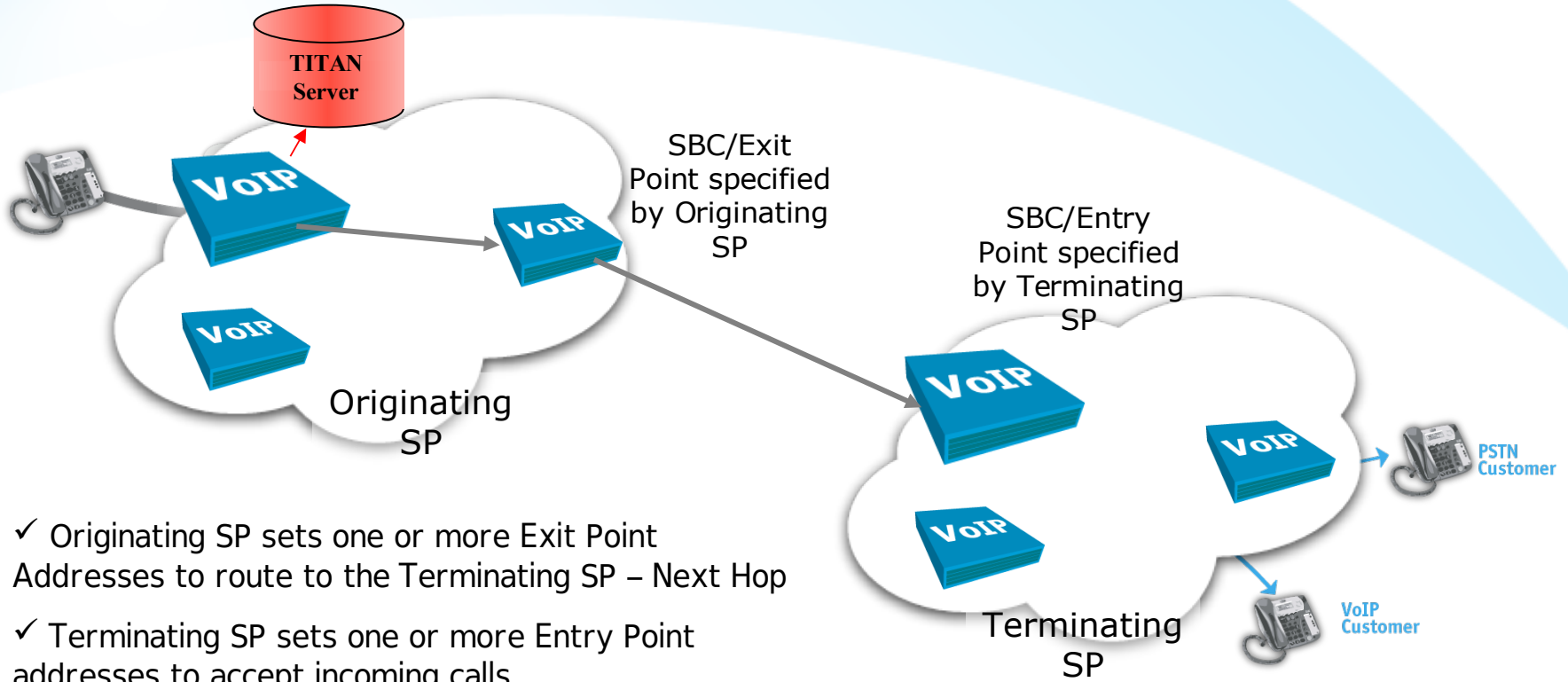


Core requirement – route to partner SBC



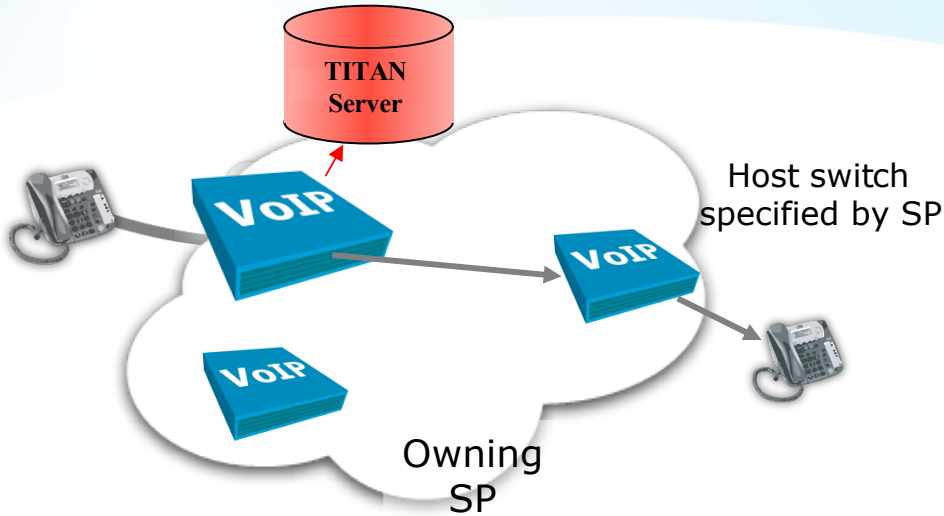
- ✓ Terminating SP sets one or more Entry Point Addresses
- ✓ Terminating SP can assign different Entry Points to different partners and modify in real-time for load balancing/operational reasons
- ✓ Arbinet solution implements very flexible version of this requirement

Fully controlled interconnect routing



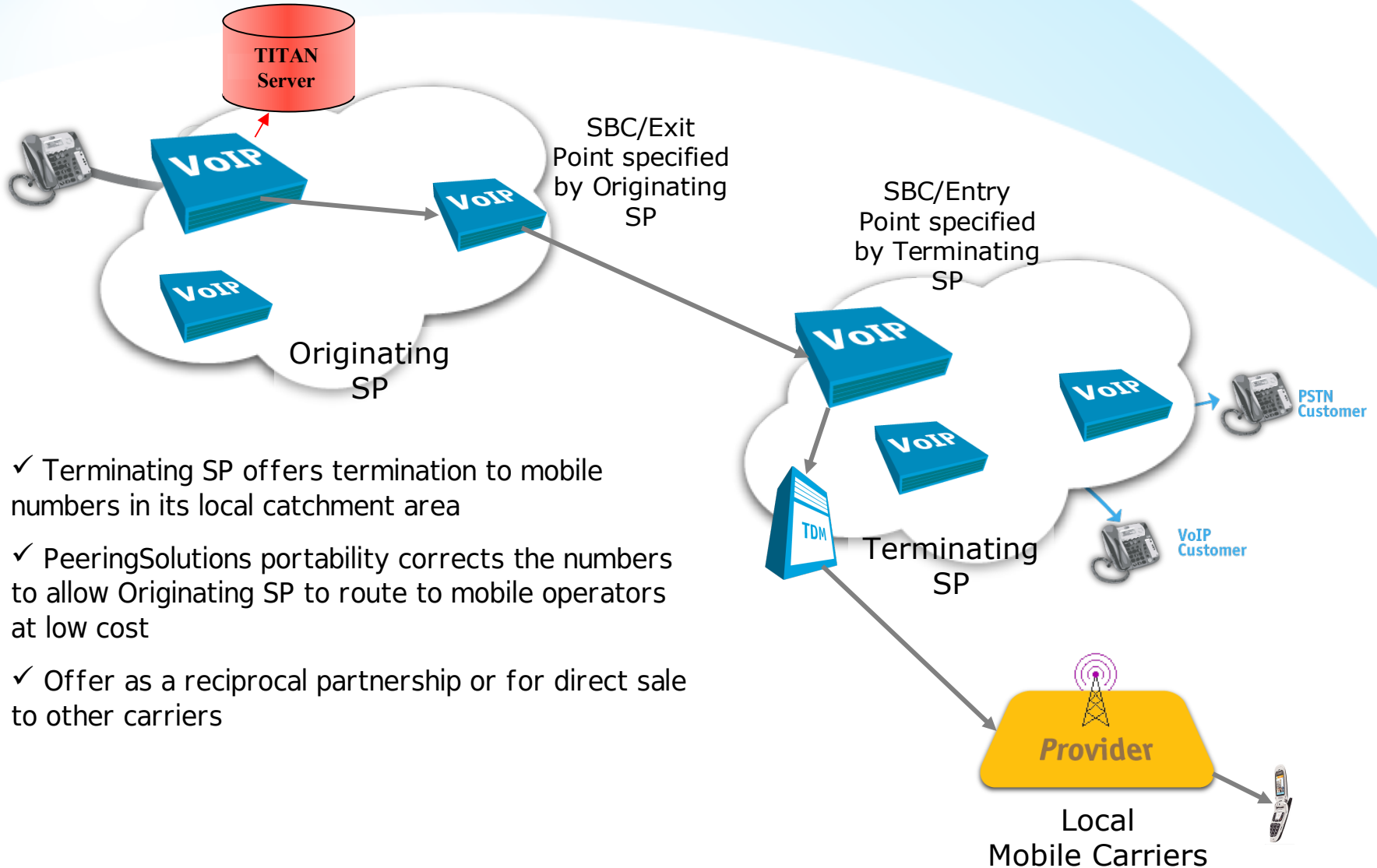
- ✓ Originating SP sets one or more Exit Point Addresses to route to the Terminating SP – Next Hop
- ✓ Terminating SP sets one or more Entry Point addresses to accept incoming calls
- ✓ Both Parties control the routing in their own networks and can modify, in real time, the addressing rules

Internal Routing Management – no incremental effort



- ✓ Originating SP sets Host switch addresses for internal groupings of numbers
- ✓ PeeringSolutions system provides tools to consolidate internal numbering into external accounts for partners
- ✓ Originating calls kept on-net for internal calls avoiding LNP dips and PSTN charges

Revenue and Cost savings from extended peering



- ✓ Terminating SP offers termination to mobile numbers in its local catchment area
- ✓ PeeringSolutions portability corrects the numbers to allow Originating SP to route to mobile operators at low cost
- ✓ Offer as a reciprocal partnership or for direct sale to other carriers

Create Accounts



- Private Peering Accounts – used for internal network routing
 - Only visible to the company that created them
- Public Peering Accounts – shared with other service providers
 - Account presence is public – not the information
- Receiving Account – Store numbers from partner relationships
 - Downloads to a ENUM addressing server

Manage Numbers



- > Numbers can be entered in several ways:
 - > Direct input of numbers via the user interface
 - > Individual numbers
 - > Codes defining the service provider
 - > Input via a text file from the host computer
 - > SOAP/XML interface
- > Codes can be portability corrected

Manage Partners



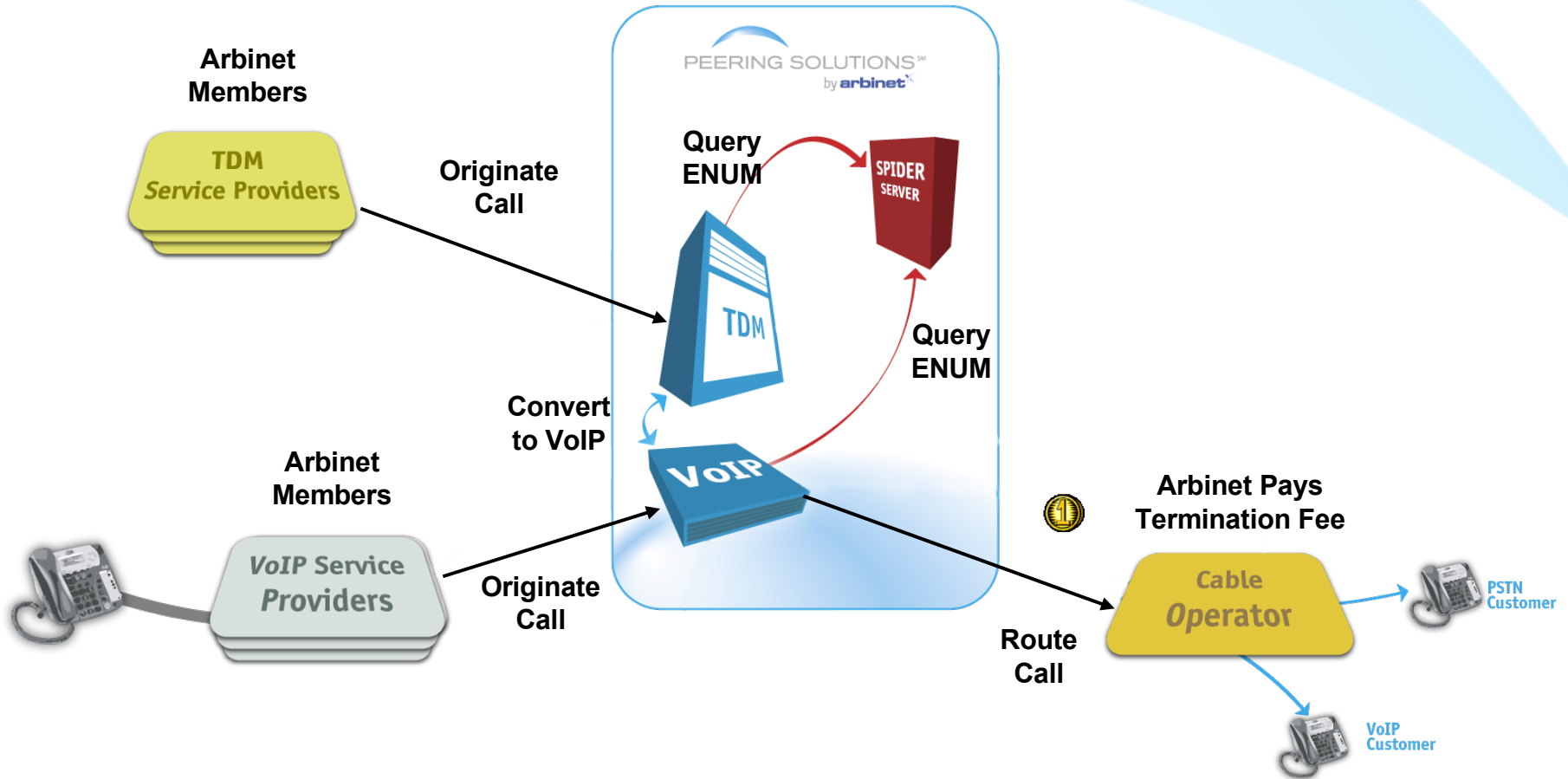
- The name and contact details of all Public Accounts in SPIDER are displayed
- Service Provider Numbers are NOT shared or visible to anyone
 - Requires explicit permission from the number owner
- Call Originator requests an interconnect to a Service Provider
 - The system manages the progress of the interconnect request
- Service Provider agrees
 - Service Provider's numbers and the addressing information are downloaded
- Any subsequent changes of numbers are synchronized as they occur

Publish Numbers

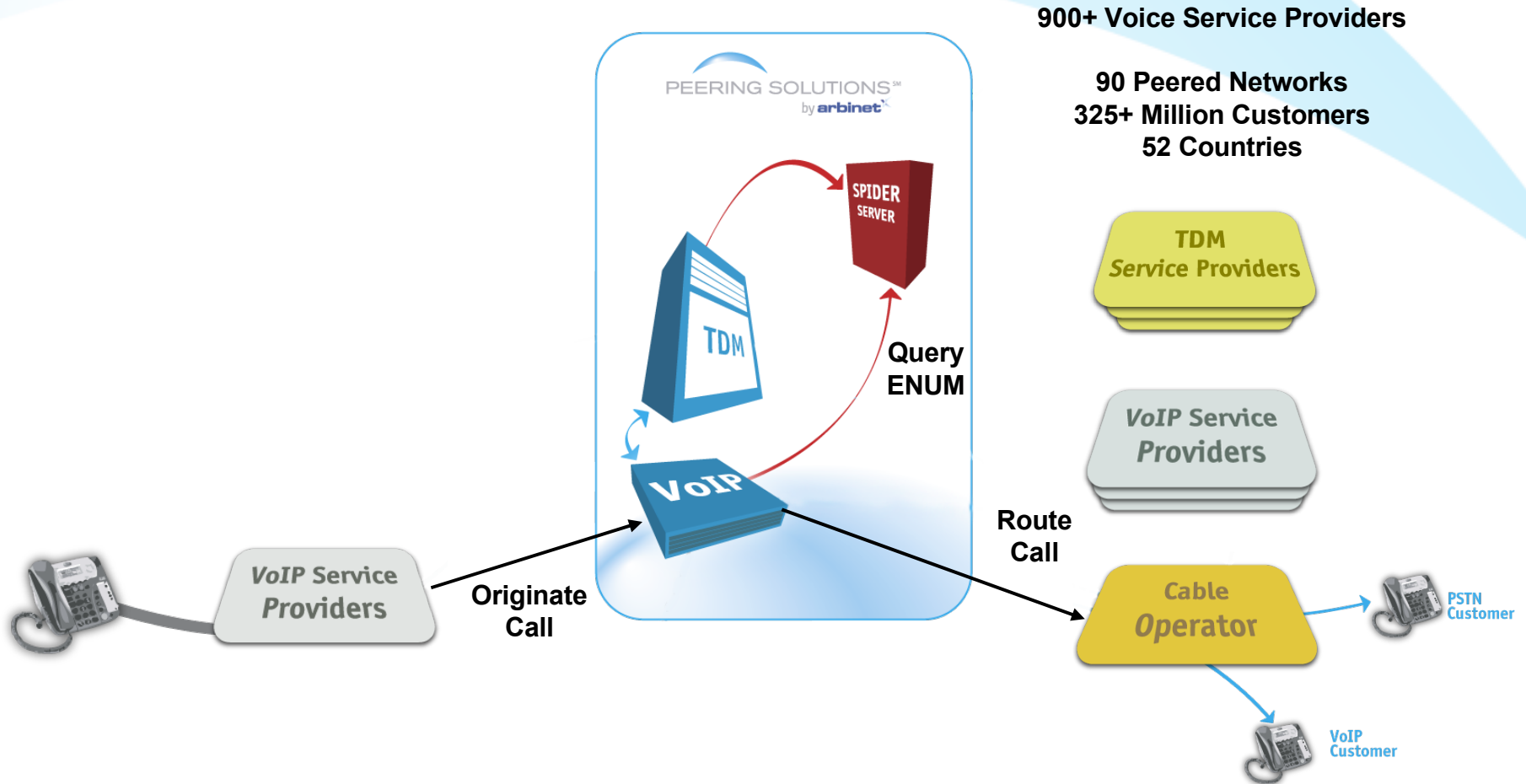


- Publish Numbers has two primary uses:
 - Combine Private accounts used for internal routing into one Public account
 - Allow an intermediary (e.g., Arbinet) to 'publish' numbers and entry points
 - Connect to a broader range of partners via Arbinet resources
- All changes to numbers are synchronized to the 'publishing' accounts
- Service Providers can request 'peering' with a publishing account

Arbinet approach to Peering



Outgoing Traffic is automatically peered



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