



## Product Substitution, Functional Equivalency, and the Technology Transition

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## Technology transition is moving rapidly

- Residential/small business customers increasingly adopting new services
- Most recent FCC data shows copper-based TDM service diminishing rapidly
  - 30% VoIP – including cable and fiber to the home products (e.g., FiOS)
  - 44% Wireless – majority mobile; some fixed wireless take-up, primarily where copper facilities no longer available
  - ~25% remain on copper for various reasons, including battery backup, emergency access, minimal broadband facilities, inertia
- FCC and state initiatives may accelerate the decline in copper networks
  - FCC policy encourages fiber deployment; eliminates some wholesale opportunities
  - CAF II and state funding to increase broadband networks
  - Broadband lifeline
  - Municipal broadband initiatives



## Some consumers continue to resist the transition to new products

- Consumers are unaware of new technology when existing services continue to function
- No viable alternative to existing copper POTs service
  - Price
  - Functionality –DSL, fax, alarm systems
  - Standalone service may no longer be available
- Concerns about connectivity and reliability
  - Line powered service vs. customer-provided battery backup
  - Emergency call services
  - Medical monitoring devices
- Limited wireless availability and coverage

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## Key transition issue is defining functionally equivalent substitute products

- Traditional definitions of product equivalency focus on demand substitution
  - Consumers substitute one product for another when prices rise or supply diminishes
  - Does adoption imply equivalency or simply availability?
  - Can consumers return to the original product when price differences moderate?
- Technology substitution includes additional issues
  - Consumers cannot “sit out” the technology transition or return to discontinued products
  - Not all products available in all locations
  - Substitute products may increase functionality but also price (e.g., bundles)
- Intermodal substitution creates additional complexity
  - Increases some functionalities but reduces others (e.g., mobility vs. reliability)
  - Requires more customer participation

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## Models for defining functionally equivalent service

- Current definitions of product equivalency focus on availability and consumer adoption
- DOJ Merger Guidelines
  - Defining study areas (specific vs. general)
  - Number of available competitors
- State legislation
  - Number of competitors, including intermodal competitors
  - Location specific competition
- FCC copper retirement rules
  - Equivalent/enhanced service, including comparable wholesale access
  - Maintain the “network compact,” including service availability and reliability
  - Ensure consumers are aware and informed

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## Product substitution in other industries may provide some guidance for telecom

- Drug industry has substituted generic (nearly identical) and biosimilar (comparable) drugs based on
  - Scientific advances (i.e., technology changes)
  - New treatment options
  - Potential reductions in price without loss of effectiveness
- Formal FDA process tests and approves the substitute products
  - Compare substitute product to a reference product
  - Ensure “comparable” effectiveness, safety, availability
  - Allow some variation based on medical need
  - Disclose and explain the differences between the drugs
- New drugs are “bio-similar” not “bio-the-same”; the totality of the evidence proves comparability and substitutability

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## The FDA process can help us define, test, and determine product comparability

- Identify reference product(s)
  - Copper-based wireline service
  - Standalone POTS and POTS with features
- Identify and segment potential replacement products for separate review
  - “Wired” products – cable, fiber
  - Over the top VoIP
  - Wireless products - mobile, fixed, satellite
- Segment markets by customer requirements
  - Mass markets, including consumer and small business
  - Enterprise markets
  - Wholesale markets

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## Modeling comparability (continued)

- Identify key service requirements – one size does not fit all
  - Type of service available by location
  - Reliability – including emergency power, security
  - Service quality – voice and data, including network availability and call persistence
  - Emergency services – access to 911, location accuracy
  - Functionality – feature availability and limitations
    - × Supported calling services (collect calling, call blocking, etc.)
    - × Interconnection with other devices – medical alerts, alarm systems, CPE
    - × Support for accessible devices
  - Consumer protections
    - × Regulation
    - × Complaint handling
- Test each proposed product against the key service requirements
- Determine comparability on a product by product/location by location basis

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## State commissions will play a key role in and managing the technology transition

- Define functionally equivalent products
  - Identify customer requirements
  - Map requirements to products/services
  - Identify product voids and potential solutions
    - × Need for copper connectivity for Lifeline support type products
    - × Broadband availability
- Determine areas where functionally equivalent products are/will be available
  - Maryland, Michigan, Ohio beginning the evaluation process
  - Segmented analysis based on customer needs/location
    - × Business vs. residential
    - × Wired vs. wireless
  - Are competitive offers available? Are they comparable?



## State Deregulation Rules Implicitly Define the Availability of Substitute Products

Competition Definition	States
<b>Legislation Designates All Providers Competitive</b>	Alabama, Florida, Hawaii, Illinois, Indiana, Maine, Michigan, Missouri, New Hampshire, North Dakota, Wisconsin
<b>Finite Competition Test</b>	
ILEC+1	Delaware, Idaho, South Carolina, South Dakota
ILEC+2	Kansas, Mississippi, Ohio, Texas
<b>Carrier Elects Competitive Status</b>	Arkansas, North Carolina, Nevada, Tennessee
<b>Commission Determination</b>	Alaska, Arizona, California, Colorado, Connecticut, DC, Georgia, Iowa, Kentucky, Louisiana, Maryland, Massachusetts, Minnesota, Montana, Nebraska, New Jersey, New Mexico, New York, Oklahoma, Oregon, Pennsylvania, Rhode Island, Utah, Virginia, Vermont, Washington, West Virginia, Wyoming

- **Preserving consumer choice**
  - **Bundled service vs. standalone voice**
    - × Does the need for POTS remain?
    - × Can a price-equivalent bundled product substitute for POTS?
    - × Is affordability a requirement for proving substitutability?
    - × Should over the top products be considered in equivalency review?
  - **Does the substitute product continue to support competitive choice?**
    - × What competitive services will remain after the technology transition?
    - × What is required to change carriers?
- **Oversight of new services**
  - Ensuring continued availability at reasonable and comparable prices
  - Monitoring quality and reliability?
  - Must existing laws be amended?