Determining the Costs of Universal Service

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Overview

- What is “universal service”?
- What are the public policy goals associated with universal service support?
- What are the costs and costing methodologies that could be used to establish levels of universal service support?
- How well do these costing methodologies comport with the determined public policy goals?
- Summary of results

What is “universal service”?

- Many definitions have been used in different countries and at different times
  - Availability of local telephone service in all geographical locations in a country
    - network extended to all regions/villages
    - payphones existing in all regions/villages
    - personal telephone service of a given quality (single/party line, direct dialing, network reliability and features, etc.)
  - Interconnection of local networks to national and international networks
  - Telephone service is priced so that it is reasonably “affordable” by the population

What is “universal service”?

- Economics focus is on whether telephone service costs are affordable
  - Assume that if service prices are affordable, then people will buy service and carriers will supply it
  - So remaining issues are:
    - does the price of the service match its cost?
    - is the cost affordable?
  - Implication is that we should permit customer demand to drive what service should be offered

What makes service "affordable"?

- "Affordability" is the cost of providing telephone service relative to customer purchasing power
- The cost of providing service
  - Depends on geography and customer density
  - Depends on efficiency of provider
  - Depends on the type and quality of service provided
- The purchasing power of the customer
  - Depends on customer incomes
  - Depends on desirability of the particular telephone service product offered relative to other telecom services, or to non-telecom goods and services

Public policy goals

- Universal service support should be provided in a manner so that such support is:
  - Sufficient to meet universal service needs
  - Narrowly targeted to meet only those needs
  - Competitively neutral
  - Simple to administer

Sufficient

- Support should be in an amount sufficient to ensure the provision of universal service
- Economic implication is that:
  - Definition of supported basic local service should be conservative (*e.g.*, narrowband)
    - perhaps more limited than general telephone service by not including ancillary features (*e.g.*, voice mail, caller ID, etc.)
    - do not wish to impede upgrades to this service, though
  - Support should be based on the total cost incurred by an efficient service provider, including an appropriate normal profit -- not higher or lower

Appropriately targeted

- Support should go only to customers for whom telephone service is desirable, but unaffordable
  - Incomes low relative to cost of service (*i.e.*, most to regions where costs are high and people are poor)
    - city slums: yes
    - mountain resorts: no
  - Generally, no more than a single line per household
  - Service capabilities and quality an open issue
- Economic implication is that subsidies should go only to customers, not to carriers
  - Customers are the only entities that can internalize the tradeoffs between cost, income and desirability

Appropriately targeted

- Must determine how narrowly support is to be targeted in terms of what:
  - Services receive support, *e.g.*
    - residence
    - business
  - Regions receive support -- defined by:
    - general cost zone
    - wire center
    - neighborhood
- Extent of cross-subsidy to be permitted based on:
  - Equity in customer burden
  - Degree of competitive pressure

Competitively neutral

- Support should not be distributed in a manner that favors certain carriers over others
  - Support should be “portable”
  - Reimbursements should be nondiscriminatory
- Best way to achieve this is by subsidies directed only to customers, not to carriers
  - Customers can then transfer this subsidy to the carrier that they determine best meets their needs
- Second-best method is to make portable, nondiscriminatory subsidy payments to carriers

Administratively simple

- Although decision making about universal service support is most efficient when subsidies are directed at customers, this can be very complicated administratively
  - Customer-by-customer determination of “need”
  - Maintaining a system of direct customer payments
- For administrative reasons, subsidies must usually be directed to recipient carriers
  - Must monitor to ensure that funds are being spent appropriately

Costing methodologies

- To determine appropriate support amounts, the cost of basic telephone service must be estimated
- There are three principal methodologies
  - Historical embedded costs (HEC)
  - Forward-looking “actual” costs (FLAC)
  - Forward-looking economic costs (FLEC)
- Each has different implications for satisfying the public policy criteria
- Only FLEC ensures calculation of efficient support levels

Historical embedded costs

- HEC calculates costs using historical books of account
- HEC embodies:
  - Network design, efficiency levels, service offerings and quality that exist today
  - These characteristics may (and do) differ from the telephone service that universal service subsidies are intended to support

Historical embedded costs

- HEC satisfaction of public policy criteria:
  - Does not ensure that support will be appropriately targeted because customers and services that once were expensive may now be cheap
  - Likely ensures that support will be excessive either because there are no efficiency incentives or because new costs may not match old costs
  - Does not ensure that support will be competitively neutral because different carriers may have different HECs
  - Is administratively burdensome for CLECs

Forward-looking "actual" costs

- FLAC calculates costs using historical books of account, but projected incrementally forward
- FLAC embodies:
  - Network design and costs that exist today
  - Because current network design and cost so strongly influence efficiency levels, service offerings and quality, these must also be substantially unchanged
  - These will differ from defined universal telephone service

Forward-looking "actual" costs

- FLAC satisfaction of public policy criteria:
  - Does not ensure that support will be appropriately targeted for same reason as HEC
  - Support will be excessive because new competitive pressures will exceed old efficiency incentives
  - Does not ensure that support will be competitively neutral because different carriers may have different FLAC (*e.g.*, due to market share or focus)
  - Is administratively burdensome for CLECs

Forward-looking economic costs

- FLEC calculates costs using a model of efficient provision of basic local service
- FLEC embodies:
  - The network design and efficiency of a competitive carrier operating at efficient scale to serve the market
  - Any desired definition of supported basic telephone service

Forward-looking economic costs

- FLEC satisfaction of public policy criteria:
  - Ensures that support will be appropriately targeted to defined basic telephone service
  - Implied support level will encourage efficient operations and be sufficient to ensure quality service, yet not attract inefficient entry
  - Support will be competitively neutral because all carriers will receive equivalent subsidies independent of their “actual” costs (which may differ due to market share or focus)
  - Administratively, is the least burdensome for carriers

Results from use of FLEC

- Customers
  - Receive the appropriate services at minimally distorted prices
  - Receive the maximum benefits of competitive supply
- Incumbent LECs
  - Face consistent competitive and subsidy incentives
  - Do not face inefficiently incented CLECs
- CLECs
  - Face consistent competitive and subsidy incentives
  - Do not face inefficiently incented ILECs or CLECs
  - Face minimal administrative burdens

Summary

- Universal service support should be sufficient, targeted, competitively neutral and simple to administer
- FLEC is the most appropriate methodology for costing universal service
- Other methodologies (HEC and FLAC)
  - Do not cover the correct costs or encourage carrier efficiency
  - May suppress the development of competition
  - Are administratively burdensome