Policy Regulatory and Financial Frameworks: Interconnection

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Introduction

- The provision of widely-available, affordable, reliable and secure ICT services will require substantial private sector investment.
- Many countries are relying on competition or public private partnerships to stimulate investment.
- Successful telecommunications competition requires government involvement to:
  - level the playing field
  - ensure appropriate investment signals, and
  - protect consumers
- Today’s focus is on the role of interconnection regulation.
Each Carrier Must Interconnect
Regulating Interconnection

- The physical linking of networks is an issue that is typically resolved at the technical level.
- The most difficult issue in carrier to carrier interconnection negotiations is price
  - each carrier wants to pay the least possible amount to have its traffic terminated on the other carrier’s network
  - there is little or no basis for compromise
  - voluntary negotiations will typically fail
  - competition does not help; regulation is required
Terminating Access Monopoly

Network X

Network Y

Network Z

X

Customer

Network of Customer’s Provider

a priori competition

ex post monopoly
Regulating Terminating Access

- Why should regulators set terminating access rates?
  - they have to
  - $P > C$ implies a subsidy from one technology to another

- How should regulators set terminating access rates?
  - standard answer: require cost-based termination rates
  - The cost basis for termination rates can be established through
    - cost modeling, or
    - benchmarking
Cost Modeling

- The preferred cost standard must be selected
  - historical
  - forward-looking

- World best practice
  - forward-looking cost models
  - designed to estimate “total service long run incremental costs” (TSLRIC)
LRIC Cost Definitions

- **Long Run Incremental Cost**
  - from a given level of output, the additional cost of providing an increment of service
  - typically does not include any overhead
  - effect of spare capacity is to reduce LRIC

- **Total Service Long Run Incremental Cost**
  - the increment is the entire amount of a service from zero to current level
  - does include “efficient” overhead
  - focuses on a green field network
TSLRIC Cost Models

- Design a new, efficient network to provide the current array of services
  - adopt best in use technology
  - optimize switching and transmission network
- Cost out the hypothetical network
  - WACC
  - depreciation
- Add operating expenses
- Identify interconnection and service costs
TSLRIC Pros and Cons

- Considered best international practice
- Provide economically efficient price signals
- Competitive Market Standard
- May be quite different than book costs
- Requires an extensive cost data and geographically specific network usage data
- Can be time consuming and expensive
BENCHMARKING

- Look to rates that have been set in other jurisdictions as a rough guide to the costs an economic model would generate.

- Every country is different and finding a set of relevant benchmark countries can be difficult.

- In general, the benchmark countries should not include those where rates may contain a monopoly element.

- In so far as possible, the benchmark countries should be similar in terms of basic factors such as population, geography, market structure, market penetration, etc.

- Benchmark analysis may be as contentious as cost modeling.
Benchmarking Mobile

- Current rates dependent on their historical path
- As a new service, in many countries mobile telephony was only lightly regulated, or not regulated at all
- High mobile terminating rates were used to subsidize handsets and call origination charges
- Addressing the network externality issue in this way may have made sense in the early days of the technology
- Now that mobile service is established throughout the world, and in many countries has more subscribers than fixed line services, the subsidy may no longer be appropriate
Symmetry

- Wireless may be the forward-looking technology for both fixed and mobile networks → fixed/mobile symmetry
- Mobile/mobile symmetry consistent with a competitive outcome
Other Inter-carrier issues

<table>
<thead>
<tr>
<th>Access Deficit Charges</th>
<th>Adjustments made to reflect fact that costs may have been incurred to subsidize certain services to promote social goals such as universal service or low cost residential access.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure sharing</td>
<td>Allowing entrants to use existing ducts, conduits, trenches, manholes, street pedestals, towers, rights-of-way, etc.</td>
</tr>
<tr>
<td>Resale</td>
<td>Allowing one licensee to sell the services of another licensee directly to public.</td>
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<tr>
<td>Unbundling (Resale of network elements)</td>
<td>Making network elements available to licensees for use in their own networks.</td>
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<tr>
<td>Collocation</td>
<td>Making space available in licensee facilities for other licensees’ equipment to facilitate interconnection and/or unbundling.</td>
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Conclusion

- There is a significant role for regulators in ensuring efficient provision of services and maximum investment opportunities.
- Excessive regulation will reduce investment.
- Excessive deregulation will cause uncertainty and reduce investment.
- Interconnection is one of those issues that requires regulatory involvement.