Pricing Strategies and Challenges for The Telecommunications Authority of Trinidad and Tobago

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Trinidad & Tobago
Overview

- Background
- Rationale for Regulating Wholesale Pricing
- Pricing Issues since Liberalisation
- Interim Approaches
  - Interconnection Case Study – Establishing a Mobile Termination Rate
- Proposed Regulatory Mechanisms
  - Focus on Retail Minus Approach
- Questions and Answers
Telecommunications Act and Regulations require that:

- All concessionaires establish interconnection rates on a cost basis as prescribed by TATT. Where commercial negotiations fail between concessionaires and a dispute is filed, TATT may set interconnection rates in accordance with an established cost methodology.

- TATT may regulate rates for access to any facility (not including interconnection) in accordance with an established cost methodology.

- TATT may establish price regulation regimes in cases where there is an exclusive or dominant operator, cross-subsidies or there is evidence of anti-competitive behaviour.
Rationale for a Wholesale Price Regulation

- Preventing anti-competitive pricing (e.g., margin squeezing)
- Setting interconnection rates
- Resolving interconnection disputes
- Setting rates for access

Wholesale Price Regulation
Wholesale Pricing Issues since Liberalisation

Wholesale Broadband Access

- Smaller ISPs complained about margin squeezing by incumbent, *Telecommunications Services of Trinidad and Tobago (TSTT)*
- Potential for margin squeezing was reduced with introduction of competition in the international facilities market

Interconnection (fixed and mobile termination)

- One dispute was filed by the new entrant mobile operator, *Digicel*, over the basis of rates (reciprocal vs. asymmetrical)
- A second dispute was filed by Digicel to set rates
- Two (2) arbitration panels have decided on this matter
Wholesale Pricing Issues since Liberalisation

Access to Backhaul Leased Facilities

- Smaller operators complained about over-priced backhaul links provided by the incumbent, TSTT.
- Prices for backhaul leased facilities were reduced with introduction of competition in fixed telecommunications market.

International Settlement

- A concessionaire providing only international services accused domestic network operators of predatory pricing in the international settlement market.
- Concessionaires recently requested that a price floor be set in this market.
- TATT in the process of making a determination.
Challenges

- No industry cost-model for determining rates
- Limited cost data available
- Information asymmetry
- Fully Allocated Costing (FAC) and Historical Cost Accounting (HCA) principles utilised by incumbent
- Limited established alternative regulatory mechanisms to set wholesale prices in absence of cost data
- Limited regulatory resources to deal with avalanche of regulatory issues
Setting Interconnection Rates in absence of Industry Cost Model
<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 2005</td>
<td>Concessions granted to Digicel to provide public mobile services</td>
</tr>
<tr>
<td>January 2006</td>
<td>1st Dispute filed by Digicel: Parties failed to agree on basis of rates (reciprocal vs. asymmetrical). Digicel challenged TSTT’s RIO which insisted on reciprocal rates.</td>
</tr>
<tr>
<td>March 2006</td>
<td>1st Arbitration Panel established by TATT which: • Established an SKA arrangement between the parties so that there could be physical interconnection to enable the provision of services. Digicel launches on April 6th 2006. • Decided to set interim rates in the short term. This decision is appealed by TSTT</td>
</tr>
<tr>
<td>May 2006</td>
<td>High Court ruled that TATT did not have jurisdiction to set interim rates pending the outcome of a dispute resolution process.</td>
</tr>
<tr>
<td>August 2006</td>
<td>1st Arbitration Panel issued its decision: “that the requirement of section 25(2)(m) of the Telecommunications Act (“the Act”) that interconnection rates be “cost based” does not preclude TSTT from insisting in its negotiations with Digicel that termination rates of TSTT and Digicel should be the same (“reciprocal” or “symmetric”) and that the costs upon which the reciprocal rates are to be based are the costs of an efficient operator at a steady state in a competitive market.” Panel recommended that TATT develop an independent cost model. TATT directed parties to resume negotiations.</td>
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### Background to Interconnection Disputes

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>October 2006</td>
<td>Digicel applied to the Supreme Court for Judicial Review (JR) seeking:</td>
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<tr>
<td></td>
<td>1. An order quashing the 1st Panel’s decision</td>
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<td></td>
<td>2. A declaration supporting its interpretation of section 25(2)m that termination rates should be based on each operator’s own costs, potentially resulting in asymmetrical rates</td>
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<tr>
<td></td>
<td>Supreme Court determined that it was not open to it to make the declaration sought based on the JR application.</td>
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<tr>
<td></td>
<td>Parties failed to conclude negotiations so TATT directs them to submit another dispute for resolution.</td>
</tr>
<tr>
<td>November 2006</td>
<td>A second dispute in respect of termination rates and other aspects of the interconnection agreement was filed by Digicel.</td>
</tr>
<tr>
<td>May 2007</td>
<td>2nd Arbitration Panel established by TATT</td>
</tr>
<tr>
<td>March 2008</td>
<td>2nd Arbitration Panel issues decision on termination rates, and requires parties to pay each other for termination of calls on a retroactive basis (from the time of physical interconnection on April 1st 2006).</td>
</tr>
</tbody>
</table>
Pricing Mechanisms Used

Over the course of the two interconnection pricing disputes, the following approaches were taken by the Panels in establishing interconnection payment terms:

✓ **Sender Keeps All (SKA)**
  
  • Interim solution until rates could be established
  
  • This arrangement also extended to other operators who terminated traffic on the networks of the parties

✓ **Operator Cost Models**
  
  • Considered in the assessment of whether rates should be reciprocal or asymmetrical and in determining a termination rate for an efficient operator in Trinidad and Tobago

✓ **Benchmarking**
  
  • Interim approach to setting interconnection and other access rates
  
  • Also considered in the assessment of whether rates should be reciprocal or asymmetrical and finally adopted in determining a termination rate for an efficient operator in Trinidad and Tobago
Application of SKA

✓ In place for more than (two) 2 years

✓ Limitations and challenges:

• difficult for operators (including third parties) to plan retail pricing strategies and other financial obligations since it was not known:
  — what termination revenues were likely to be
  — how long the SKA arrangement would have been in place
  — whether there would be a ruling for retroactive payments

• with no requirement to pay-out monies for terminating on domestic networks, and with increased competition in the international incoming market, international settlement rates plummeted.

• the delay incurred in the resolution of the 2 disputes was further compounded by the decision of the last Panel for the retroactive payment of rates by both parties. This had a knock-on effect on other operators terminating on the two networks.
## Operator Cost Models

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Digicel Model</strong></td>
<td>Based on LRIC principles, although it did not have the same level of complexity as other best-practice mobile LRIC models.</td>
</tr>
<tr>
<td><strong>Expert Assessment</strong></td>
<td>Provided to Panel by Analysys</td>
</tr>
<tr>
<td><strong>TSTT Model</strong></td>
<td>FAC Model based on historical cost accounting (HCA) principles.</td>
</tr>
<tr>
<td><strong>Expert assessment</strong></td>
<td>Provided to the Panel by NERA</td>
</tr>
<tr>
<td></td>
<td>TSTT made adjustments to the mobile component of the model to update it with forward-looking information and assumptions to derive forward-looking costs.</td>
</tr>
</tbody>
</table>
## Assessment of Operator Cost Models

<table>
<thead>
<tr>
<th>Methodology</th>
<th>Digicel Model</th>
<th>TSTT Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>“… neither cost model relies upon “long run” costs, in that their depreciation methodologies do not lead, or have not been changed, to constant annuities.”</td>
<td>✓ Bottom Up inputs</td>
<td>✓ Top Down inputs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cost of Capital</th>
<th>20.6%</th>
<th>16.2%</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Significant factor affecting output of model</td>
<td>✓ Does not affect output as significantly as with Digicel’s model</td>
<td></td>
</tr>
<tr>
<td>✓ Consistent with international best practice</td>
<td>✓ Reasonable for initial stages of competition in T&amp;T</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment of Common Costs</th>
<th>Considerable uncertainty about the treatment of common costs in both models</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Assigns an unusually higher proportion of common costs to interconnection services</td>
<td>✓ Audit of accounting systems required to determine appropriateness of cost allocations between fixed and mobile networks</td>
</tr>
</tbody>
</table>
## Assessment of Operator Cost Models

<table>
<thead>
<tr>
<th></th>
<th>Digicel Model</th>
<th>TSTT Model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Asset Lifetimes</strong></td>
<td>Nearly the same for each operator and not significant in the evaluation of termination rates</td>
<td></td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td>Best available technology (GSM), therefore dynamically efficient in this respect</td>
<td></td>
</tr>
<tr>
<td><strong>Routing Factors &amp; Distribution of On-net and Off-net calls</strong></td>
<td>Not significant in the evaluation of termination costs</td>
<td></td>
</tr>
<tr>
<td><strong>Network Efficiency</strong></td>
<td>“Does not evaluate the mobile termination costs of an efficiently operated network, because the volumes in the cost model do not correspond to the capacity of the network installed.”</td>
<td>“… does, however, correspond to an efficient network. The network of TSTT is efficiently operated because TSTT is an earlier entrant in the Trinidad and Tobago mobile market and has therefore sufficient volumes.”</td>
</tr>
</tbody>
</table>
Comparison of Operator Cost Models @ Static Efficiency

<table>
<thead>
<tr>
<th>TSTT: WACC = 16.2%</th>
<th>WACC = 16.2% Both Operators</th>
<th>WACC = 20.6% Both Operators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TSTT Cost Model</strong></td>
<td>0.072</td>
<td>0.072</td>
</tr>
<tr>
<td><strong>Digicel Cost Model</strong></td>
<td>0.066</td>
<td>0.061</td>
</tr>
<tr>
<td><strong>Difference (TSTT-Digicel)</strong></td>
<td>0.006</td>
<td>0.011</td>
</tr>
</tbody>
</table>

Figures represent the mobile termination rate expressed in US cents/min (Tax Included)

Source: analysis TERA
Explaining the Difference in the Model Outputs

70% of the difference between the 2 cost models

Digicel average cost (not efficiently operated network) with WACC = 20.6%
Digicel average cost (efficiently operated network) with WACC = 20.6%
Digicel annual cost in 2008/2009 (not efficiently operated network) with WACC = 20.6%
Digicel annual cost in 2008/2009 (efficiently operated network) with WACC = 20.6%
Digicel annual cost in 2008/2009 (efficiently operated network) with WACC = 16.2%
TSTT annual cost (efficiently operated network) with WACC = 16.2%

Source: analysis TERA
The Use of Benchmarks

Broad Guidelines

✓ Benchmarks may serve as a proxy for cost-based prices, either as a short-term measure while a top-down cost model is being constructed or as a longer-term proportionate remedy where necessary.

✓ Benchmarks should be constructed in such a manner that it provides a reasonable approximation of cost-based prices.

✓ The principal form of benchmarking should be a comparison of cost-based prices for the equivalent service in other countries.

— TATT Costing Methodology
## The Use of Benchmarks

### Proposed Benchmarks

<table>
<thead>
<tr>
<th>Proposed Benchmarks</th>
<th>Caribbean Countries</th>
<th>European Countries</th>
<th>TSTT’s Proposed Benchmarks</th>
<th>New Zealand</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Digicel’s Proposed Benchmarks (Source: DotEcon)</strong></td>
<td><strong>Digicel</strong></td>
<td><strong>Operators with &lt;20% market share</strong></td>
<td></td>
<td><strong>Average mobile termination cost estimates</strong></td>
</tr>
<tr>
<td></td>
<td>US 19.2 to 21.3 cents</td>
<td>US 7.8 to 20.6 cents</td>
<td></td>
<td>US 6.7 cents</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>75th percentile average to account for risks</strong></td>
<td>US 8.5 cents</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Appropriate cost based rate as determined by NZCC (2006)</strong></td>
<td>US 9.2 cents</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Value to which rates should move downwards by 2009/2010</strong></td>
<td>US 7.4 cents</td>
</tr>
</tbody>
</table>
The 1st Panel found that the cost of mobile termination of a typical efficient operator in Trinidad and Tobago in a steady state market is within a reasonable range comprised of:

✓ TSTT’s cost model result (US 7.2 cents);

✓ NZCC Report’s 75th percentile average (US 8.5 cents); and

✓ The Panel Expert’s finding of Digicel’s cost at static efficiency (US 6.6 cents).

This range is narrow enough that reciprocal charging cannot be excluded on the basis that the proposed rate is not that of an efficient operator.
Reciprocal or Asymmetric Interconnection Rates

Interconnection rates should be reciprocal except in the following three circumstances:

1. If the charges are not based on the costs of an efficient operator in a steady state of the market in the first place.
   - If too high, they may perpetuate inefficiency.
   - If they are too low, they may have anti-competitive effects.

2. If one operator is not providing the same service under similar conditions such that even in a state of static efficiency it cannot reasonably be expected to match the efficient costs of the other.

3. If it would frustrate the objects of the Act as they relate to the development of fair competition and encouragement of investment
Setting an Appropriate MTR

2nd Panel’s Decision

- A more appropriate range for mobile termination costs based on new and updated information since the 1st Panel’s Decision
  - US 6.1 to 7.3 cents
- Traffic balance between the two operators
- International arbitrage
- Excessively high termination rates could have a negative impact on the market
- Benchmark data
- Cost study results

Reciprocal MTR: US 6.3 cents (TT 40 cents)
Proposed Wholesale Price Regulation Regimes:

*Focus on Retail Minus Approach*
TATT’s **Price Regulation Framework (PRF)** outlines the principles to be adopted by the Authority in fulfilling its obligations pursuant to the Telecommunications Act, for:

- defining relevant telecommunications services markets,
- assessing whether there is dominance, exclusivity of supply or the presence of anti-competitive pricing within those markets, and
- imposing price regulation only if justified.

The presumption in legislation, is that in the absence of dominance (jointly or otherwise) or proven anti-competitive behavior, prices will be determined by providers in accordance with the principles of supply and demand in the market.

Telecommunications (Pricing) Regulations will provide the legal provisions to implement the PRF. Draft regulations have been submitted to the Minister for laying in Parliament.
Regulating Wholesale Prices

The PRF proposes three approaches to setting wholesale prices when required:

- ✔ Cost-based Pricing, particularly for interconnection services and essential facilities
- ✔ Price Caps,
- ✔ Price Floors, and
- ✔ Retail Minus

Cost-based Pricing is typically used for setting interconnection services and essential facilities.
Price caps are typically used in most jurisdictions for regulating retail prices, while cost based calculations are used for wholesale prices. However this approach can have a number of disadvantages:

- a price squeeze may result if the price cap is forcing retail prices down faster than wholesale prices, thus reducing profits for new entrants
- the use of annual cost calculations for wholesale prices gives no rewards to operators who improve their network efficiency
- the annual process of calculating costs for wholesale services is itself a costly exercise. Price caps can assist in reducing the regulatory burden on the industry
- price caps allow for flexibility and innovation in pricing within groups of broadly similar services, whereas cost-based pricing constrains such market dynamics.

For these reasons, the PRF provides TATT with the option of using Price Caps to regulate wholesale prices if it considers it appropriate.
Retail Minus as a Tool for Regulating Wholesale Prices

✓ Involves setting the price of a wholesale access service with respect to the retail price of a service in a downstream market.

✓ The retail price is reduced to take account of the costs incurred in provision of retail services that are not incurred in the provision of the wholesale access services.

✓ While a cost-based or “cost plus” approach requires information on the cost of the underlying infrastructure, the “retail minus” approach only requires information on the allocation of retail costs to relevant services.

✓ Generally, the goal of any retail minus regime should be to allow competitors who add value or reduce costs to survive, while precluding those who do neither.

✓ Not as popular as the cost-based approach for regulating wholesale prices. Has been used in Europe for preventing margin squeeze by the incumbent/SMP operator in wholesale broadband access markets.

✓ Countries in which a retail-minus approach has been used include Sweden, Ireland and the United Kingdom.
A formal exposition of the retail minus approach is the Efficient Component Pricing Rule (ECPR). The ECPR is one method used for setting interconnection rates, but usually produces prices that exceed incremental costs.

Prices set using the ECPR incorporate the opportunity cost to the interconnection provider of customers lost to the entrant. This includes any contribution to shared and common costs and any foregone profits. Although it facilitates productive efficiency, it does not necessarily facilitate allocative efficiency.

The ECPR is therefore seldom used.

Source: ITU Regulation Toolkit
Advantages of the Retail Minus approach:

- it provides the incumbent operator greater flexibility in pricing innovative services such as broadband, where the dynamic nature of the market *may* make it difficult to determine the long run costs of providing the service;
- it allows operators to compete in the retail market even if retail prices are out of line with costs;
- it prevents “margin squeeze” by ensuring that the margin between retail and wholesale services is large enough; and
- the cost analysis required may be less complex than a “cost plus” approach.

For these reasons, the PRF provides TATT with the option of using Retail Minus to regulate wholesale prices if it considers it appropriate.

TATT may also use this approach as an *ex post* mechanism to test for the likelihood of anti-competitive pricing practices such as price squeezing.
Retail Minus General Formula

$$P_w = P_r - c$$

Where,

$P_w =$ Retail minus derived wholesale price

$P_r =$ Downstream retail price

$c =$ value of minus and generally represents the incremental cost of providing the retail service ($IC_r$) minus the incremental cost of providing the wholesale service ($IC_w$).
TATT has fashioned its retail minus framework after the European Regulators Group (ERG) *Principles of Implementation and Best Practice regarding the implementation and use of Retail Minus pricing as applied to electronic communication activities.*

The process for applying any retail-minus pricing regime will involve the following:

i. Determination of the retail price to be used in the retail minus formula (Pr);

ii. Determination of the minus value to be used in the retail minus formula (c);

iii. Determination of the review period of the retail minus.
Determination of Retail Price

Considerations

- Whether the retail minus should apply to a single wholesale service with respect to a single retail service or a combination of wholesale and retail services (‘portfolio approach’);

- The extent to which temporary promotions, discounts or any other special service offering should be taken into consideration;

- The extent to which a wholesale and retail service are directly related;

- The extent to which exorbitant profits are included in the retail price.
1. The retail minus can be applied to a single set of services or a combination of services depending on:

- the similarity of the costs of services in a bundle;
- whether (if a portfolio approach were adopted) the concessionaire could price squeeze or behave anti-competitively while complying with the retail minus; or
- the level of competition in the relevant retail service market(s) between the concessionaire and his competitors to whom he is providing the wholesale service(s) under review.
2. Promotional, special or discounted retail prices will be included in the retail minus formula, if those prices exist within the market for more than half of the period under review. Otherwise, the average price of the retail service over the period under review will be utilised.

3. A retail price may be used in the retail minus formula even if it is not for a pure resale product of the wholesale service.

4. Any exorbitant profits may be subtracted from the retail price before it is used in the formula.

5. Any retail price used would ensure that the concessionaire receives a rate of return no less than its weighted average cost of capital.
Determination of the ‘Minus’

- Are there retail costs saved by a concessionaire in providing its competitors with a wholesale service instead of providing retail customers with the retail service?

- Are any additional costs incurred by the concessionaire in providing the wholesale service instead of the retail service?

- Whether the retail costs of the wholesale service provider or those of his wholesale customer (the concessionaire competing with him in the retail market) should be used in the formula;

- Whether the minus value should be expressed as a fixed monetary value, a fixed percentage of the retail price or a hybrid of the two.
Determination of the ‘Minus’

Principles to be adopted

1. The incremental retail costs (IC\textsuperscript{r}) that should be excluded in determining the wholesale price may include, but may not be limited to, those associated with:

   ✓ Retail product management and product development;
   ✓ Sales, marketing and advertising;
   ✓ Customer care costs;
   ✓ Number services;
   ✓ General support or any other overheads that could be attributed to retail services;
   ✓ Billing and collection costs (including bad debt).
Determination of the ‘Minus’

Principles to be adopted

2. The incremental costs associated with providing the wholesale service (IC\textsuperscript{w}) shall be included in determining the final wholesale price. Such costs may include:

- wholesale billing costs or any other administrative costs incurred in providing the wholesale service

- investment costs incurred in providing the wholesale service

The extent to which these costs should be recovered from the concessionaire’s wholesale customers and its own retail customers will depend on the extent to which retail customers would benefit from competition in the relevant retail market(s).
3. The minus may be expressed as:
   - a fixed monetary value;
   - a percentage of retail price; or
   - a hybrid,

   depending on the underlying cost structures of the services under consideration such that there is minimum potential for anti-competitive behaviour while complying with the retail minus.

4. Costs that are most reflective of efficient costs (in accordance with the Authority’s Costing Methodology) may guide the determination of whose or which retail costs should be included in the retail minus formula.
Determination of Review Period

Considerations

✓ The review period should be long enough to give some stability to the market, but short enough to allow reviews in the light of changing market conditions;

✓ It is also important to take into account the particular circumstances of the markets under consideration and the desired regulatory objectives based on those circumstances.
The End