Enhancing access to submarine cables for Pacific Island Countries

Sessions 8–9: How to determine cost based access prices

Suva, Fiji
31st July–3rd August, 2017
Matthew O’Rourke
ITU workshop on enhancing access to submarine cables for Pacific Island countries
Sessions 8-9: Adapting a CLS costing and pricing model

Sessions 8-9:
Adapting a Cable Landing Station pricing model to develop regulatory positions
Agenda

Aims and objectives for these sessions

Session 8
- Describe the scenario
- Explain the exercise
- Work in groups

Session 9
- Conduct the negotiations
Remember Normalia

- This practical exercise concerns the fictitious country of Normalia.
- Normalia is a typical ("normal") country with regulatory challenges similar to those in your country.
- The details required for each practical exercise are presented in the slides / handouts.
Telecoms in Normalia

Regulator - TRAN
(Telecom Regulatory Authority of Normalia)

Fixed Telecoms
- Telecom (100%)

Mobile Telecoms
- Telecom (70%)
- Normcell (30%)
- Mobilco (entrant)

Submarine Cable (CLS operator)
- ABC (Telecom) – current monopoly
- JKL (Normcell) – due to start end 2013

Various service providers
(including ServCo an ambitious ISP)
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TRAN’s CLS pricing consultation
TRAN’s main concern – Normalia is lagging

- Normalia’s neighbours have recently taken major strides forward in offering low-cost broadband internet access
- They have achieved significantly higher broadband penetration:
  - 15% fixed broadband penetration versus 4% in Normalia
  - 32% mobile broadband penetration versus 12% in Normalia.
- They have access to the same submarine cables (ABC and JKL) and have only slightly larger national markets.
- Immediate action is needed to stop Normalia falling further behind and suffering economic consequences.
TRAN’s regulatory objectives

- TRAN has two major and inter-linked objectives: lowering prices and increasing market demand.
- It has set the following targets:

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2022</th>
<th>2026</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total service demand in Mbps</td>
<td>1,200</td>
<td>10,000</td>
<td>20,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average price per Mbps (USD)</td>
<td>160</td>
<td>&lt;100</td>
<td>&lt;20</td>
</tr>
</tbody>
</table>
Acquisition of a cost model

- TRAN has discovered a very helpful model (*the ITU training CLS cost and pricing model*) which it believes will help in meeting its regulatory goals.

- The model has been made available to the operators and service providers, but TRAN is aware that much of the data in the model may need to be adapted.

- It challenges the industry to use the model to help bring prices down and increase demand.

- However, TRAN recognises that the CLS operators do need to make a reasonable rate of return over the lifetime of the assets.
Introducing the costing and pricing model

Model Structure

1. Dashboard
2. Input assumptions
3. Usage factors
4. Service demand
5. Annualised costs
6. Service pricing
8. Service revenue
9. Profitability

Model Conventions

Worksheets
- Cover page
- Key
- 1. Dashboard
- 2. Input assumptions
- 3. Usage factors
- 4. Service demand
- 5. Annualised costs
- 6. Service pricing
- 7. Summary Sheets
- 8. Input Sheets
- 9. Calculation sheets

Cells
- Direct input into the model
- Inputs copied from other worksheets
- Calculation cells
- Output cells copied to other worksheets
A regulatory hearing will be held tomorrow

- Normcell to offer its view as the JKL landing station operator.
- Telecom to offer its view as the ABC landing station operator.
- ServCo and Mobilco will not be at the hearing but have already said that TRAN’s objectives are the minimum they would expect.

Q1: Are TRAN’s objectives achievable?

Q2: If not, why not, and how close can we get to the targets?

Q3: Please back up your position by editing the model’s data inputs.

Q4: What regulatory action (if any) does TRAN need to take?
Methodology and assumptions

- Each group (representing either Telecom or Normcell) will receive a briefing paper setting out the terms of reference from its respective Board.
- The aim is find a way to meet the Board’s objectives (as well as those of TRAN) and then “sell” that approach to TRAN by way of a short presentation.
- Assume that:
  - TRAN will not accept market forecasts lower than the LOW or higher than the HIGH scenario in the model.
  - The cable investment costs in the model are accurate.
- Any other assumptions may be changed. If you do so please colour it red so that TRAN can see the changes as well as the impact on the model results.
TRAN’s opinion
How the task might have gone
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Telecom’s challenge

- Defend the prices that it is planning to establish on 1\textsuperscript{st} January 2018:
  - $293 pm for E1
  - $1,083 for E2
  - $2,933 for E3
  - $12,907 for STM1
  - $29,333 for STM4.

- Achieve a NPV of free cash flow of at least $6m over the period to 2026.
- Achieve a ROCE of at least 1\% over WACC
- And meet TRAN’s targets for bandwidth demand and cost per Mbps price.
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Telecom’s suggested approach - 1

- Set the CLS Operator scenario to **Total Market**
- Set to the option of **Cost+Mark-up+Gradient**
  - The gradients should be set to equate with 2018 prices

<table>
<thead>
<tr>
<th>Capacity services offered</th>
<th>E1</th>
<th>E2</th>
<th>E3</th>
<th>STM-1</th>
<th>STM-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price gradient Year 1</td>
<td>30%</td>
<td>15%</td>
<td>-13%</td>
<td>-15%</td>
<td>-43%</td>
</tr>
</tbody>
</table>

- The mark-up should be set to achieve the margin demanded by the Board = **10%**.
- Adjust the WACC
- Which brings the 2018 prices in line with Board plans.

<table>
<thead>
<tr>
<th>Service</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual lease - E1</td>
<td>293</td>
</tr>
<tr>
<td>Annual lease - E2</td>
<td>1,068</td>
</tr>
<tr>
<td>Annual lease - E3</td>
<td>2,975</td>
</tr>
<tr>
<td>Annual lease - STM-1</td>
<td>12,384</td>
</tr>
<tr>
<td>Annual lease - STM-4</td>
<td>29,794</td>
</tr>
</tbody>
</table>
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Telecom’s suggested approach - 2

- To obtain service demand levels required by TRAN set Baseline Service Demand to HIGH and adjust forecasts downwards:

<table>
<thead>
<tr>
<th>Licensee</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual growth rate</td>
<td>86%</td>
<td>70%</td>
<td>55%</td>
<td>43%</td>
<td>34%</td>
<td>35%</td>
<td>27%</td>
<td>18%</td>
<td>12%</td>
</tr>
</tbody>
</table>

- To boost profitability:
  - Remove the tariff gradient quickly – e.g. 2019
  - Seek that TRAN removes revenue-based licence fee.
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Telecom’s outcomes - 1

Price per Mbps per month (USD)

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual lease - E1</th>
<th>Annual lease - E2</th>
<th>Annual lease - E3</th>
<th>Annual lease - STM-1</th>
<th>Annual lease - STM-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
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<tr>
<td>2018</td>
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</table>
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Telecom’s outcomes - 2

Total service demand (Mbps)

Year
2017: 1,142
2018: 1,942
2019: 3,069
2020: 4,482
2021: 6,098
2022: 7,808
2023: 9,607
2024: 11,340
2025: 12,705
2026: 13,726

Year
Total service demand (Mbps)
Telecom’s outcomes - 3

- Results under Telecom (ABC) CLS scenario are:
  - NPV of free cash flow of $6.1m over the period to 2026.
  - On average a ROCE of 0.84% over WACC.

- Possible solution to improve ROCE over the longer term is to reduce prices more slowly (after the initial period of regulatory scrutiny).
  - For example, a mark-up of 12% rather than 10% will provide ROCE of 1.07% over WACC
  - Under this scenario TRAN’s demand and price scenarios will still be achieved.
Normcell’s challenge

- Defend the prices that it is planning to bring to market on 1 January 2018:
  - $250pm for E1
  - $3,000 for E3
  - $10,000 for STM1
  - $25,000 for STM4.
- Achieve profitability by 2022 at the latest.
- Achieve an average ROCE of at least equal to the WACC over the period to 2026
- And meet TRAN’s targets for bandwidth demand and average price per Mbps.
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Sessions 8-9: Adapting a CLS costing and pricing model

Normcell’s suggested approach

- Set the CLS Operator scenario to **Total Market**
- Set to the option of **At Cost with a Price Gradient**
  - The gradients should be set to equate with 2018 prices

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<tr>
<th>Capacity services offered</th>
<th>E1</th>
<th>E2</th>
<th>E3</th>
<th>STM-1</th>
<th>STM-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price gradient Year 1</td>
<td>30%</td>
<td>0%</td>
<td>0%</td>
<td>-17%</td>
<td>-44%</td>
</tr>
</tbody>
</table>

- Adapt the proportion of demand by service to reflect the fact that E2s are not provided.

<table>
<thead>
<tr>
<th>Proportion of demand by service bandwidth</th>
<th>2017</th>
<th>2021</th>
<th>2026</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1</td>
<td>30%</td>
<td>17%</td>
<td>0%</td>
</tr>
<tr>
<td>E2</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>E3</td>
<td>50%</td>
<td>38%</td>
<td>25%</td>
</tr>
</tbody>
</table>

- Which brings the 2017 prices in line with Board plans.

<table>
<thead>
<tr>
<th>Service</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual lease - E1</td>
<td>241</td>
</tr>
<tr>
<td>Annual lease - E2</td>
<td>0</td>
</tr>
<tr>
<td>Annual lease - E3</td>
<td>2,931</td>
</tr>
<tr>
<td>Annual lease - STM-1</td>
<td>9,802</td>
</tr>
<tr>
<td>Annual lease - STM-4</td>
<td>23,857</td>
</tr>
</tbody>
</table>
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Normcell’s outcomes - 1

Price per Mbps per month (USD)

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<th>Annual lease - STM-1</th>
<th>Annual lease - STM-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
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<td>2018</td>
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</tbody>
</table>
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Normcell’s outcomes - 2

<table>
<thead>
<tr>
<th>Year</th>
<th>Medium demand scenario</th>
<th>High demand scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>1,164</td>
<td>1,164</td>
</tr>
<tr>
<td>2018</td>
<td>2,022</td>
<td>2,445</td>
</tr>
<tr>
<td>2019</td>
<td>3,207</td>
<td>4,591</td>
</tr>
<tr>
<td>2020</td>
<td>4,674</td>
<td>7,744</td>
</tr>
<tr>
<td>2021</td>
<td>6,366</td>
<td>11,943</td>
</tr>
<tr>
<td>2022</td>
<td>8,158</td>
<td>16,978</td>
</tr>
<tr>
<td>2023</td>
<td>10,046</td>
<td>22,863</td>
</tr>
<tr>
<td>2024</td>
<td>11,868</td>
<td>29,070</td>
</tr>
<tr>
<td>2025</td>
<td>13,308</td>
<td>34,342</td>
</tr>
<tr>
<td>2026</td>
<td>14,389</td>
<td>38,508</td>
</tr>
</tbody>
</table>
Normcell’s suggested approach - 2

- Results under Normcell (JKL) CLS scenario, even with High demand, leave negative ROCE and unprofitable until 2026.
- However if:
  - Licence and regulatory fees are removed
  - Tariffs are changed to Cost + mark-up + gradient (after the first year)
  - The mark-up is set at 15%
  - The tariff gradient is removed in 2020.
- Then:
  - Profitability is reached in 2021
  - Average Normcell ROCE is 0.29% over WACC
  - TRAN’s service demand targets are broadly met.
Normcell’s outcomes - 3

- Normcell’s proposed Year 1 prices are below required level:
  - $250pm for E1
  - $3000pm for E3
  - $10,000 for STM1
  - $25,000 for STM4.

- Prices in subsequent years can be increased a little above the model outputs to compensate.

- NPV of free cash flow of at least $5.5n over the period to 2026.

- On average a ROCE of 0.29% over WACC.
What regulatory action may be needed?

- The key to achieving the demand increases is to achieve the price falls.
- No-one knows for sure how price will affect demand, but TRAN could impose a price-cap at a level it deems suitable (based on the model results).
- There are dangers with such an approach:
  - The price cap may not generate sufficient demand increase.
  - The price cap may limit the effectiveness of competition and thus act as a floor as well as a ceiling to prices.
- It is probably better to keep a watching brief, asking the operators to report back monthly/quarterly on tariffs and demand.