

# Final Report

## ITU Asia Pacific Centre of Excellence

### Expert Level Training on Network Cost Modeling

TOT Academy, Bangkok, Thailand

9 – 13 November 2009

#### 1. Objectives

Network cost modeling is an important aid to regulators and market participants in establishing defensible prices for telecommunications network services, and it is a field in which substantial bodies of learning and practice have been developed over many years, and involves many complexities and choices. A certain degree of understanding is required in order to choose and apply the correct methodology. The risk is that regulatory intervention may be inappropriate and distort or delay the development of a competitive telecommunications services market.

The scope of this workshop includes:

- The importance of costing and the economic rationale;
- Cost standards;
- Methodologies and their application;
- Data sourcing;
- Actual models and model-building;
- Using model outputs;
- Presentations, small groups working together and case study analysis be used as learning tools to provide practical insights on key issues.

#### 2. Attendance

63 people attended the workshop and were participated in all sessions. Participants from 17 countries were represented, namely: Australia, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, India, Kiribati, Malaysia, Mongolia, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, Turkey, Viet Nam, and Zambia. In most cases the delegates represented regulatory authorities or operators. There were also representatives from ministries. Most members of the course had a background as accounting experts or engineers while there were also lawyers and economists. The overall background and effective involvement of all the participants made the workshop fruitful.

#### 3. Proceedings

The workshop was held at TOT Academy, TOT Public Company Limited in Bangkok jointly with Pakistan Telecom Authority (Policy and regulation node). The workshop included five interactive lectures:

1. **Professor Heinrich Otruba**, from the University of Economics and Business Administration of Vienna (Wirtschaftsuniversitat Wien), former Head of the Austrian Regulatory Authority for Telecommunication (RTR) and Advisor of the Director General for the Information Society, European Commission.
2. **Dr. Roland Belfin**, Head of International Affairs of the Austrian Broadcasting & Telecom Regulatory Authority in Vienna.
3. **Mr. Jim Holmes**, Directory, Incyte Consulting Pty Limited, developer of several cost models for telecommunication services.
4. **Mr. Zeeshan Gul**, Director (Commercial Affairs), Pakistan Telecommunication Authority.
5. The workshop was opened by Mr. Thaneerat Siripachana, Deputy Permanent Secretary, Ministry of Information and Community Technology, Thailand, Mrs. Sudaporn Vimolseth. TOT Academy, and Mr. Ashish Narayan, Advisor, ITU Asia Pacific Centre of Excellence.

Based on the theoretical framework of telecoms liberalization, wholesale tariff setting and regulatory accounting practical experiences from all over the world have been demonstrated. The theoretical framework was the main part of presentations by the trainers. The practical part has been done by demonstrating and testing different costing models online and a discussion about advantages and disadvantages of the various models. The demonstrated costing models were also available on the training computers and could be copied by participants for their own use. Recommendations for the application of specific approaches based on country specific circumstances and needs were provided by the Speakers.

The practical part was supported by a multi stage group work, in which participants had to solve a prepared case study. The trainers gave their recommendations during the case study working sessions on demand of participants.

### **The workshop interactive sessions were as follows:**

#### **Session 1: Course Overview**

- Cost Modeling – The big picture
- Course Objectives and Methodology
- Learning Outcomes
- Workshop Style
- Self – introductions

#### **Session 2: Prices regulation and costs**

This session examined the circumstances under which regulators seek to determine prices for services in telecommunications markets and the basis on which they do so, giving participants an understanding of the alternative ways in which prices may be established, and when each approach is appropriate.

#### **Session 3: Cost standards and their use**

This session provided a high level overview of the various approaches that may be applied to costing for telecommunications services pricing including FDC, LRIC, LRAIC etc. giving participants a clear idea of the different situations in which the various cost standards might be best applied.

#### **Session 4: The nature of modeling**

This session tried to clarify what it is to build models in the context of telecommunications network services. Alternative approaches were discussed in contrast to modeling.

#### **Session 5: Group Work Exercise A**

We reviewed key aspects of presentations made, and, in the process, became accustomed to working within the assigned groups.

#### **Session 6: Top Down and Bottom Up Models and Benchmarking**

Distinguishing between top down and bottom up models, and benchmarking and understanding when each might be appropriate for determining network service prices.

#### **Session 7: Weighted Average Cost of Capital (WACC) – Theory and practice**

This session explained the theory behind the various WACC elements, and methodologies used to estimate them.

#### **Session 8: Some actual cost models of mobile and fixed networks**

This session used examples of real models modified to include illustrative rather than actual data.

#### **Session 9: Group Work Exercise B – Selecting Suitable Model Approaches**

Each group examined situations described in handouts and reported back to the plenary workshop on findings and recommendations.

#### **Session 10: Accounting Standards and Accounting Separation**

This session described the key accounting standards in place and the principles and practices of accounting separation employed by regulators to segregate costs of services.

**Session 11: Data Inputs, Building and Testing the model**

This session described the issues that arise in the course of building the model and making it robust. The latter process includes discussion on whether and how there should be public consultation.

**Session 12: Briefing on Group Work Exercise D**

All groups were briefed on the exercise and how they should structure themselves to best complete it as a team, with responsibilities allocated to each team member.

**Sessions 13 / 15: Group Work Exercise D and Reporting on progress of group work****Session 16: Limitations of Network Cost Modeling**

This session described the circumstances where care of judgment is required before implementing the calculations from Network Cost Models, including the intrinsic issues associated with models themselves, as well as consideration of the complexities of the market environment. In addition, possible ways of addressing and overcoming the limitations were discussed at length.

**Sessions 17 / 18 / 20: Continuation Group Work Exercise D and Reporting Results**

Each Group reported its results for key service costs and gave reasons for the options they took and choices made on the way.

**Session 21: Cost modeling in practice – country case study**

Objective: This session provides a detailed case study of a cost modeling exercise carried out by Pakistan Telecommunication Authority. Mr. Zeeshan Gul from the Pakistan Telecom Authority presented a specific country case study from this region. Due to his practical experience and his deep knowledge he could bridge the gap between general principles and model structures and their practical application to countries in this region.

**Session 22: Overview other cost models available on the market****Session 23: Modeling in an NGN Environment**

The workshop concentrated on cost modeling of circuit switched networks, but this session described model types of networks being planned and implemented for the future – NGN networks. Cost modeling for these is developing, and the session provided important appreciation on how NGNs and related cost models differ from current networks and models.

**4. Outcome and findings**

During the discussion sessions it was recognized a very high level of specific knowledge on the side of participants and strong interests in several topics, which resulted in lively debates with a strong focus on the most important principles. In this respect the case studies and group work fostered the mutual exchange of experience and knowledge and gave additional input for discussion. In particular participants were interested in the practical aspects of the implementation of regulatory accounting models and there has been strong demand on the materials offered by the trainers.

The work has been executed as programmed but it would be good to count with at least one additional day to cover in depth certain assumptions like for example the valuation of assets and cost allocation. In particular lively discussions showed that there was demand for more detailed information on these topics.

It turned out that there is a need on the side of participants to cover also strategic issues of liberalization and regulation and to have an in depth discussion. In this respect some members of the training expressed their wish for a separate workshop in a similar format dealing with strategic issues.