



# Regional Seminar on Costs and Tariffs and Meeting of the Member Countries of the Regional Group for Asia and Oceania (SG3RG-AO)

Bali, Indonesia, 28-30 May 2012

## FINAL REPORT OF THE SEMINAR

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TELECOMMUNICATION DEVELOPMENT BUREAU

### 1. Introduction

The Regional Seminar on Costs and Tariffs for Member Countries of the Regional Group for Asia and Oceania has been organised in close cooperation with the Ministry of Communication and Information Technology of Indonesia (MCIT) and PT. Telkom Indonesia International (Telin). The meeting of the Study Group 3 Regional Group for Asia and Oceania (SG3RG-AO) has followed the seminar from the afternoon of 29 and 30 May 2012. 96 delegates from 12 countries participated.

Mr. Ande Safari, Acting of President Director of Telkom Indonesia International (Telin) welcomed the delegates, followed by Mr. Byoung Nam Lee, Chairman SG3RG-AO and the Representative of the International Telecommunication Union Ms. Carmen Prado-Wagner. Dr. Muhammad Budi Setiawan, MCIT addressed his welcome speech to all the participants from the region and officially opened the seminar.

The seminar was chaired by Mr. Kalamullah Ramli, Senior Expert to the MCIT for Technology Affairs.

### 2. Results

The choice of the subjects treated during this seminar was done in coordination with the Management Team for the Regional Group for Asia and Oceania, in order to serve as guidelines and recommendations for Administrations as well as for the discussions of the Study Group 3 Regional Group of the Study Group 3 meeting organised after the seminar.

#### **Session 1: Preparing for the World Telecommunication Standardization Assembly (WTSA-12) Presented by Mr. Kishik Park, Chairman ITU-T Study Group 3**

The speaker explained about the World Telecommunication Standardization Assembly, which is held every four years and defines the next period of study for ITU-T. Preparations for WTSA-12 will take place throughout 2012, notably with the organization of regional preparatory meetings (RPM). The duties of the World Telecommunication Standardization Assembly are set forth in Article 18 of the ITU Constitution. Article 13 of the ITU Convention provides that the WTSA shall be convened "to consider specific matters related to telecommunication standardization". The Assembly will also review working methods including approval processes, the work programme and the structure of the different Study Groups. Sector Members from the region can participate in the regional preparatory meetings, their contribution are very important. A one-day Global Standards Symposium (GSS) will be organised the day before WTSA. The speaker clearly presented the major activities and themes to be treated by ITU-T. Regarding expected tariff and accounting issues, it was mentioned the proposal for WTSA resolution calling for practical implementation of Recommendation D.156 on Network Externalities; and the proposal to revise Recommendation D.195 on Time-scale for settlement of accounts for international telecommunication services, with a suggestion of modification from 50 to 30 days.

#### **Session 2: Charging, accounting, and economic issues of the use of next-generation networks in a Broadband environment**

##### **Presented by Mr. Heinrich Otruba, Vienna, Economics University of Vienna**

The speaker presented the concept of NGN and NGA and the structural specifications including the difference between a PSTN network with a NGN actual network. It was explained that the crucial issues attributed to NGNs are related to the basic properties of NGNs IP interconnection, the guarantee of quality of service; and the implications of cost savings by different network topology. Regarding quality of service in PSTN, the network performance in relation to interconnection services was implicitly defined by technology, in the case of NGNs service quality for voice services and

Internet may be different and must be specified. In PSTN local access combined with control over IP addresses and/or E164 numbers and the Calling Network Pays Principle creates a „bottleneck“ situation, which gives rise to potential abuse of market power and regulation. In IP networks other principles could be applied such as Bill and Keep (BaK) and transit fees for upstream traffic. In the EU, a change of the interconnection regime for voice services is under consideration. Flatter hierarchy, economies of scope and different types and numbers of network elements imply significantly different cost levels and significantly different cost structure. In this sense newly developed cost models for regulatory purposes are becoming necessary. Discussions focused on the possibility to implement BaK approach for new services as communications are becoming more and more converged in to IP, the decision of the application of a BaK approach or a cost-based approach is depending of the regulatory situation and telecommunication market of each the country.

### **Session 3: The LRIC Bottom-Up cost model developed by Korea – development, methodology, and availability approach**

**Presented by Mr. Yongsun Choi, INJE University, Korea**

The speaker presented the Cost Model developed by ETRI (Electronics and Telecommunications Research Institute) and Inje University, upon the request of the regulator KCC (Korea Communications Commission). This Bottom-Up Long-Run Incremental Cost model is being used for the regulation of interconnection rates in Korea. Each part of the cost model were presented, such as the input data, detailed steps to build hypothetical efficient networks, both mobile and fixed, and output of volumes and costs required building the hypothetical efficient networks and finally interconnection rates among operators. Support of visual display of network elements on electronic map helps validating the designed networks. The model is applied to existing operators or a hypothetical existing efficient operator, with national coverage and average market share in Korea, mixing scorched-node and scorched-earth approaches. The evolution of the mobile and fixed termination rates in Korea was explained, noting that the rates have substantially decreased in the last 12 years. The speaker proposed to share experiences in ITU-T SG3RG-AO in order to better understand and improve the BU-LRIC models. In this sense he recommended to do a survey of various options applied (or planned) in each member state. Korea is willing to provide/share their experiences and developed software systems on a non-commercial basis with other Member countries. Discussion focused on the bottom up approach applied, the acquisition of traffic data, scope of cost elements and acquisition of efficient unit prices, and simulation of tariffs. The model is developed in MS dot net environment, and is possible to adapt user interfaces and output files into different local languages.

### **Session 4: Individual country and organization experiences on cost modeling and tariff**

#### **Telecommunication infrastructure & services in Cambodia**

**by Mr. Hing Lyhay and Mr. Sieng Sithy, Ministry of Posts and Telecommunications**

The speaker presented the telecommunication regulatory reform in Cambodia and the actual market situation. All the operators participate actively in the introduction of the National Optical Fiber Backbone Network, which until now counts with 22,380 Km. Concerning regulation and policy on telecommunication and IT technologies the country is strengthen the regulations by doing a policy and technical standardization following ITU recommendations and other international organizations, in order to encourage fair competition accordingly to local and international market; readjusting the license issuing and following the 2015 ASEAN ICT Master Plan. At the end of the presentation there is a list of key actions considered as a priority for the Cambodia Government.

#### **The Indonesian experience on tariff regulation**

**by Mr. M. Ridwan Effendi, Commissioner of Indonesian Telecommunications Regulatory Authority**

The process of regulation of the interconnection in Indonesia was explained by the speaker. The main objectives of this regulation are to encourage operators to lower retail tariffs in order to have affordable tariff without compromise the service quality; increase usage of telecommunication/ICT services in people activities nationwide; and maintain sustainable growth and investment. To accomplish these objectives, the regulator of Indonesia works on the formula and policy determination, not specifically in the tariff calculation but makes periodic tariff evaluations. Some of the relevant issues in the telecommunication/ICT market in Indonesia are the existence of tight competition; penetration of more than 100% in dense areas; price sensitive market with high turnover of customers due to lower price of buying a new SIM card; the upper mid-class people usually have 2 or more mobile phones with service from different operators. One concern is related to the promotions done by operators, for example SMS gratis for some months and other until one year. This promotion should be regulated. The near future challenges for the NRAs are the deployment of broadband network nationwide; the use of the universal service fund (USO) and the ICT fund; implementation of Open Access Network Regulation; and the use of IP as interconnection platform.

### **The Mobile tariff regulation in a transition market environment. The Papua New Guinean experience** by Mr. Dominic Moros, National Information and Communications Technology Authority

After a detailed presentation of the telecommunication/ICT market in Papua New Guinea, the speaker presented the regulatory transition of the ICT market in Papua New Guinea (PNG) which has recently went into major change, mainly being a transition from regulated monopoly to a competitive market. The government desired an ICT industry that was market driven, effective and competitive and that meets the social, industrial and commercial needs of PNG and its people. As a result, the National ICT Act 2009 was developed to establish the National Information & Communications Authority (NICTA) as the regulatory body to pursue these objectives. Certain powers and responsibilities of the Independent Consumer and Competition Commission of PNG were transferred to the new NICTA and additional powers and functions were given to NICTA as the consumer & industry watchdog for the ICT industry. The transition included opening up of market to new entries and allowing competition for the first time in 2009. NICTA has so far issued over 26 network licences, over 30 applications and content licences to operators in PNG. Recently in April 2012, NICTA issued 9 new applications licences for operators to supply data services. Regarding retail pricing, the approach applied is to leave the market processes to determine the retail prices. A crucial objective is to monitor and address harmful anti-competitive market practices such as price discrimination, market collusions, predatory and excessive pricing through ex ante regulatory means, so that intervene through appropriate regulatory approaches only when anti-competitive practices are detected to be high and harmful to the industry and consumers. Regarding whole sale price regulation, due to the recent transition, wholesale regulation in PNG has not taken shape. Mobile network operators (MNOs) are currently implementing mobile termination rate (MTR) through a commercial agreement set at K0.26 per minute and the term was agreed for 10 years. NICTA intends to conduct an inquiry into setting cost-based MTR, for that NICTA will explore different cost models and the will decide on the one that is appropriate and suitable to the country situation and the availability of data. There are other activities planned for the wholesale and retail regulation of ICT services including the process of declaring core network infrastructure in the international connectivity market.

### **Impact of the Floor Rate concept in the telecom industry in Sri Lanka** by Mr. Nishantha Palihawadana, Telecommunications Regulatory Commission

The approaches used in Sri Lanka for the regulation of tariffs are by conducting Cost / Benchmark and Hybrid for local telecommunication services. The international telecommunication services were liberalized from 2003. For voice services, until 2009 the approach used was cost-based tariffs and there after based on a floor value. For the data services are based on the calculation of cost per Mb considering core network costs, access network costs and international bandwidth costs. From 2002 to 2012 there was a significant decrease in the tariffs for on-net and off-net call charges. The entrance of new mobile operators in the market and precautionary strategies adopted by the existing operators created a price war situation. Operators are making losses and diminishing investments in infrastructure. To solve this situation the operators are applying measures such as no bonus for employees and reducing advertising budget. On the other hand, the regulator introduced a floor rate system and some of the impacts or results from this are that all the call charges were dropped up to floor rate in 2010. In 2011 the floor rate was reduced and allows the operators to reduce the tariffs if the cost is lesser than the rates at 2010. This concept motivated the development of product differentiation; bundled tariff plans offers and loyalty programs. Now the operators more concern on improving quality of the service and introducing more value added services to attract customers.

### **Telecom market & price regulation in Vietnam** by Ms. Hoang Tuyet Lan, VNPT Group

The speaker, from the incumbent operator from Vietnam, presented the market situation in Vietnam as well as the application of the Significant Market Power (SMP) concept in the country. At present the MIC is regulating by applying a registered cost model for the following services: local calls service, mobile services, ADSL, international lease lines, and international outgoing calls and long distance calls. For the other services the operators define the tariff decision based on a Government Decision. Regarding wholesale services, MIC regulates interconnection charges of fixed to fixed network (long distance call) and fixed to mobile and mobile to fixed services as well as mobile to mobile services. For long distance calls and international outgoing call the MIC regulates by announcing model, it means that the regulator provides the operators with the list of tariffs calculated and to be applied. The speaker explained that the main challenges in Vietnam are the inflexibility to make regulated services tariff, price war between operators, the price of non SMP operators are out of control/regulation as well as the promotions offered by the operators. It is important to create more attractive services, this will be able by using next generation mobile technologies LTE and WIMAX. As operator, they are proposing the following changes in Vietnam: to revise the definition of SMP operator, create a policy to regulate on Flat Rate or Basic Package, supervise/monitor operator's tariff plan by using cost-based principles, regulate local interconnection charges, control or regulate the promotion policies applied by operators, and that operators apply cost-based model between them for the determination of tariffs.

## **Cost & Tariff in Bangladesh**

by Md. Yakub Ali Bhuiyan, Deputy Director BTRC

The Telecommunication market in Bangladesh is healthy and robust with promising growth in the area of technology, services and consumers' choices. Some of the market indicators are that competition is intense, call charges are declining, customer service is being improved the geographic coverage is expanding and new value-added services are being developed. The speaker informed about the project on cost modeling, interconnection framework and tariff policy that is being implemented in coordination with ITU.

## **Session 5: Overview of recent changes in the International IP interconnection ecosystem in a Broadband environment**

**By Mr. Michael Kende, Analysys**

This presentation was made by Mr Richard Hill because Mr. Michael Kende was unable to attend the seminar in Bali. The Internet is characterized by two underlying trends in last fifteen years: the Internet has globalized and Internet traffic has increased by many orders of magnitude. Interconnection has evolved in response to these trends: Internet Exchange Points (IXPs) have helped to localize traffic and increase the efficiency of the Internet; countries with successful IXPs have become regional hubs for traffic.

The commercial Internet is relatively recent. In the US, it dates back to 1995 and interconnection was not regulated. At that time, the Internet was US-centric for a number of reasons and connectivity to Europe was very expensive. But the US-centric architecture was not sustainable because usage became more global.

There were three responses to the US-centric nature of the Internet: interconnection moved from NAPs to IXPs; the IXPs began to develop outside the US; some countries sought a policy response to pricing (e.g. ICAIS). The Internet quickly outgrew the National Access Points (NAPs) and interconnection migrated from NAPs to Internet Exchange Points (IXPs).

There have been three phases of globalization:

- US-Centric phase, for historical reasons starting with the commercialization of the Internet
- OECD-Centric, focused on developed countries in Europe and Asia
- Rest of World (ROW) Centric, focused on emerging markets. In Africa only two countries had IXPs before 2002, which has risen to 20 by the end of 2010

The OECD-Centric phase has drastically reduced both Asia's and Europe's reliance on the US for Internet connectivity. The ROW-phase has not had as great an impact on Latin America and Africa has shifted its reliance from the US to Europe.

The impact of Internet trends highlights the need for Internet hubs in emerging markets. The reliance on Internet access and content is increasing. Policy solutions should focus on creating local hubs, rather than simply lowering the cost of acting as a spoke: as demand increases, international access costs will continue to rise; in addition, access to local or regional IXPs will reduce latency and improve resiliency.

The cost of doing business and an enabling environment was noted as an important factor for companies when they consider investing.

## **Session 6: International Internet Connectivity in Indonesia – practical experience Presented by Mr. Budi S. Purba, Telkom International Indonesia (Telin)**

Indonesia has already shown a strong inclination towards the use of smart phones, with close to 3 Million BlackBerry handset users in the market. Indonesia is the second largest "facebook" after the USA and "Twitter" world's highest penetration rate at 20.8%, the demand of broadband services is huge and increasing, and of course this growth of internet users requires higher international bandwidth.

Some of the main concern and challenges for Indonesia are that this country is the world's largest archipelago with 17,054 islands. The people are spread out in more than 6000 islands and since the last mile still use copper, it limits speed and quality of service. Some areas rely on satellite services, mostly in centre and east Indonesia

The conclusion was that the first priority for Indonesia is to foster the creation and hosting of local content, by encouraging people to create and innovate to have more local content. Discussions focused on the existence of a universal service obligation fund to help to build infrastructure in the country especially for the deployment of the last mile, this is managed by the government. Malaysia introduced their experience with the use of the universal service fund to promote the development of technology in rural and far areas. Regarding content, in Malaysia there is a Content development fund that is used to promote the innovation and creation of content.

## **Session 7: International Mobile Roaming and Tariff issues for cross-border connectivity for mobile**

### **Presented by Mr. Heinrich Otruba, ITU Expert**

The presenter started by providing the definition of International Roaming (IR) "is an electronic communication service, which allows subscribers of a mobile network in one country to send and receive voice and/or data in another country in the mobile network of a roaming partner".

Normally this service is delivered based on roaming contracts between the roaming partner networks specifying technical and commercial conditions. The IR is perceived as an economic and political problem because is a very expensive service and the prices do not properly reflect the underlying cost relations. The presentation addressed the retail and wholesale IR prices. If retail prices are excessive in the sense of Art 102 EU-Treaty (Abuse of a dominant market position) competition authorities have to prove this. Two procedures before the EC failed here, neither single nor joint dominance could be proved. If wholesale prices (Inter Operator tariff) appear excessive, again dominance and abuse has to be proved on each single wholesale IR market. Competition intensity on the wholesale level is dependent on the ability of home MNOs to control subscriber behaviour in the host country, if the home MNO has concluded wholesale IR contracts with many or all MNOs of the host country.

Close organizational links between MNOs in alliances, GSM Association acting as clearing house for IR Contracts and MNOs covering several countries of a region tend to create a climate for implicit collusion.

In the EU these high roaming tariffs are seen as a major obstacle towards an internal electronic communications markets. In this sense there is no surprise that consumer protection agencies, politicians and regulators seek to reduce roaming tariffs. The speaker presented the case of the European Union, New Zealand and Australia. The case from Central America and One network in Africa were also introduced.

## **Session 8: Numbering misuse and fraud: overview of current practices, what is currently done and what are the issues**

### **Presented by Mr. Stuart Davies, Asia-Pacific Telecommunity (APT)**

Pacific Island administrations are well aware that the unauthorised hijacking of number ranges and country codes of some Pacific Islands and the use of these numbers for International Revenue Share Fraud (IRSF) and other fraudulent activities is occurring. Hijacked calls are calls that do not terminate in the called country because some-one, for fraudulent reasons, has filtered the calls away from the routing to the intended country. Usually the fraudsters filter the calls to porn sites without the knowledge of the home operator to collect the termination fee (this means millions of minutes involved). Gives rise to GSM roaming International Revenue Share Fraud (IRSF) involving losses of hundreds of thousands of dollars. This has caused some operators to block calls to the Pacific Islands to avoid getting caught by the fraud. The misuse of numbering resources continues to be an important issue for APT member countries and members are of the view that more should be done to mitigate the problem. The problem persists and continues to affect several APT countries in particular, the small island countries of the Pacific. APT members want this issue be addressed in the WCIT process in the form of a new article. In this regard, APT Members propose the following clause to be added to the relevant part of ITR, for instance, a new article 3.7 "Member States shall encourage the appropriate use of numbering resources so that they are used only by the assignees and only for the purposes for which they were assigned. In accordance with the relevant ITU-T Recommendations, Member States shall endeavor to ensure that unassigned resources are not used." Some other measure to combat the fraud presented are: to provide education of the regulators to make them aware of the problem and operators to seek their assistance to help trace how the calls are being routed, preventing Subscriber Identity fraud by targeting the provision of SIM cards, and the installation of the Near Real Time Roaming Data Exchange (NRTRDE) to counter this fraud.

## **Session 9: Update of the International Telecommunication Regulations (ITR) and the World Conference on International Telecommunications (WCIT)**

### **Presented by Mr. Richard Hill, ITU/TSB**

It was explained that the International Telecommunications Regulations (ITRs) set out the general principles relating to the provision and operation of international telecommunications, such as facilitating networking and global interoperability and promote efficiency, usefulness and availability of international telecommunications services. Discussions on this review were carried out in 1998, 2002, 2006 and ITU and its member are currently working actively to revise them. The ITR are important because it establishes the general principles for the provision of international telecommunications services and operations, facilitate global interconnection and interoperability, serve as the basis for harmonious development and efficient operation of technical facilities, promote efficiency and availability of services international telecommunications and necessary provisions of a treaty basis for services and international telecommunication networks. ITR need to be revised because the international telecommunication environment has evolved significantly, both technically and the policy, and continues to evolve rapidly. The ITR will help countries to

achieve new levels of economic and social development through effective telecommunication services. The speaker encouraged members from Asia and Oceania to provide feedback on changes that could be integrated in these regulations.

### **3. Follow-up activities**

The follow-up activities were defined during the seminar and specially during the meeting of the Regional Group for Asia and Oceania, as follows:

- During the discussions with the Ad Hoc group on Mobile Termination Rates (MTR) and International Mobile Roaming (IMR) it was decided to add some questions to the Tariff Policies issues. These questions will be prepared with the support of APT and the Ad Hoc group on IMR. The deadline for the preparation of these questions is the 30 June 2012.
- BDT has presented the studies on International Internet Connectivity (IIC) for Africa and Latin America and the Caribbean and received the request from the SG3RG-AO Members to evaluate the possibility to do a similar study on IIC for the Asia and Oceania Region.
- BDT will provide the data from the Tariff Policies Survey on costing models as contribution for the next meeting.
- The next SG3RG-AO Seminar and Meeting for 2013 will be held in Japan.

The final report and presentations of the Seminar on Costs and Tariffs as well as the contributions for the SG3RG-AO meeting are published on the website:

[www.itu.int/ITU-D/finance/work-cost-tariffs/events/tariff-seminars/Indonesia-12/index.html](http://www.itu.int/ITU-D/finance/work-cost-tariffs/events/tariff-seminars/Indonesia-12/index.html)

The Chairman of the Seminar and the Chairman of the SG3RG-AO thanked the Ministry of Communication and Information Technology of Indonesia (MCIT) and PT. Telkom Indonesia International (Telin) for the excellent organization and warm welcome to all the participants. The meeting thanked to the management team, all the speakers for their excellent contributions to the seminar, and the BDT and TSB staff for their excellent work, and requested BDT to continue with the organization of the seminar together with the future activities of the Study Group 3 as well as to continue with the synergies for both sectors to support the Asia and Oceania region.

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