International Telecommunication Union

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

D.156
(10/2008)

SERIES D: GENERAL TARIFF PRINCIPLES

General tariff principles – Charging and accounting in the international telephone service

Network externalities

Recommendation ITU-T D.156

ITU-T

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Network externalities

Summary

A network externality relates to the additional effects of a user joining a network which the user does not take into account. A user joins a network to obtain a benefit from making and receiving calls and derives a benefit from being part of the communications network. This benefit derives from being able to communicate with other users and increases with the number of users connected to the network: the bigger the network, the more beneficial it is to both existing and potential users. Hence, a user's decision to join a network benefits both them and other users. This Recommendation provides recommendations related to the payment of network externality premiums.

Source

Recommendation ITU-T D.156 was approved on 30 October 2008 by ITU-T Study Group 3 (2005-2008) under the WTSA Resolution 1 procedure.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure e.g. interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at http://www.itu.int/ITU-T/ipr/.

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Network externalities[1]

Recognizing

- Resolution 3 (Melbourne, 1988) of the World Administrative Telegraph and Telephone Conference and Resolution 22 (Rev. Antalya, 2006) of the Plenipotentiary Conference on the apportionment of revenues in providing international telecommunication services,

Considering

1. that in accordance with the International Telecommunication Regulations, accounting arrangements shall be established by mutual agreement;
2. the principles established in Recommendations ITU-T D.93 and D.140 in regard to cost-oriented tariffs and the application of accounting rates on a non-discriminatory basis;
3. that telecommunication network externalities are benefits, *inter alia*, provided to users of networks in developed and developing countries by users of networks with a strong potential for extension;
4. that users of networks in developed countries would benefit from the addition of users in developing countries because of increased calling opportunities to users in developed countries;
5. the development potential for telecommunication networks in developing countries;
6. that a network externality relates to the additional effects of a user joining a network which the user does not take into account; a user joins a network to obtain a benefit from making and receiving calls and derives a benefit from being part of the communications network; this benefit derives from being able to communicate with other users and increases with the number of users connected to the network: the bigger the network, the more beneficial it is to both existing and potential users; hence a user's decision to join a network benefits both them and other users;
7. that network externality premiums have been applied in specific circumstances in one country for termination of mobile calls,

Recalling

1. the importance of telecommunications/ICT for the social and economic development of all countries;
2. the increasingly marked imbalance that is currently to be seen between the situation of developed countries and that of developing countries in regard to economic growth and technological progress;
3. that, pursuant to Resolution 23 (Nice, 1989) of the Plenipotentiary Conference and as a follow-up to the recommendation made in "The Missing Link", ITU carried out a study of the costs of providing and operating international telecommunication services between developing and industrialized countries and concluded that the cost of providing such services was significantly higher in developing countries than in developed countries – a situation that continues to prevail;

[1] The following countries have expressed a reservation and will not apply this Recommendation: Austria, Canada, Czech Republic, Finland, France, Germany, Greece, Italy, Japan, Liechtenstein, Lithuania, Netherlands, Norway, Poland, Portugal, Russian Federation, Serbia, Spain, Switzerland, Turkey, UK, USA. In addition, the following countries have expressed a reservation with respect to this Recommendation: Argentina, Australia, Mexico, Paraguay, Thailand, Uruguay.

4. the recommendation contained in "The Missing Link" to the effect that Member States should consider adjusting their procedures for charging for international traffic in relations between developing and industrialized countries such as to set aside a small portion of call revenues for purposes of development,

Acknowledging

1. that network externalities should be expressed by a premium referred to as an externality premium which is a non-cost element in addition to the cost elements included in Recommendations ITU-T D.93 and D.140;

2. that the amount of the premium referred to as a network externality premium should be determined having regard to the following elements, amongst others:

   a) assessment of the price elasticity of demand and sensitivity of the traffic flow to the network with a strong potential for extension;

   b) the correlation between the increase in incoming international traffic and the increase in the subscriber base in the developing countries;

3. that the funds made available by the network externality premium should be determined by elements including:

   a) economic assessment of the additional customers in the country in question (including assessment of income levels and rates of mobile and fixed telecommunication penetration);

   b) geographical targeting, reduced monthly charges for certain customers, subsidies for telephone terminals, and tariff schedules tailored to the needs of marginal consumers;

   c) the cost of the investments for the network extension,

Recommends

1. that the developing countries examine whether it would be appropriate for a premium, referred to as a network externality premium, to be a non-cost, additional element, on the accounting rate for incoming international traffic from the operators of developed networks to the operators of developing-country networks;

2. that this premium be negotiated on a commercial bilateral basis by the concerned operators on the basis of the elements referred to in *acknowledging* 2 and 3 above, taking into account all relevant factors including, but not limited to: traffic level, potential business, immigrants to the developed countries, and languages spoken in the two countries;

3. that this premium be paid on the tariff for incoming international traffic from developed countries to developing countries, in other words, that it be a non-cost, additional element on the termination rate/accounting rate;

4. that the funds made available by the network externality premium, be used exclusively for extending networks in developing countries, and for awareness campaigns, including, but not limited to media and advertising costs, taking into account *acknowledging* 3 above; such costs for awareness campaigns should have a positive effect on the number of customers;

5. that the use of the funds made available by the network externality premium be monitored by the concerned parties, as mutually agreed, with appropriate oversight by an independent accounting firm, providing that this firm is not the regular auditor for either of the two parties; moreover, this fund may be established in a third country for the purposes of neutrality;

6. that further studies be carried out regarding formulas, models and guidelines for determining the actual value of any premium, how it should be collected, shared, distributed, and used, and its impact on the concerned operators.

Appendix I

Items for study

(This appendix does not form an integral part of this Recommendation)

The following items should be studied:

1. The implications of the incorporation of a network externality premium with relation to Recommendations ITU-T, such as D.93 and D.140, relative to the application of cost-oriented tariff principles, establishing whether the said premium constitutes a cost element that should be added to the cost elements included in the said Recommendations ITU-T.
2. The establishment of guidelines to guarantee the actual deposit of the said externality premium and its application to expansion networks.
3. Clarifying who should receive the funds.
4. Control and collection procedures.
5. The implementation of follow-up to allow the observation of the effects caused by the application of the Recommendation.
6. The definition of parameters enabling to qualify: "developed country" and "developing country".
7. Seeking mechanisms to prevent operators in developing countries from funding their original licence obligations with what they receive from applying the externality premium, nor investment projects already contemplated in Universal Service programs provided by regulations in the said countries.
8. Seeking mechanisms to prevent the subscribing of discriminatory agreements between telecommunications main companies in developed countries and their subsidiaries in developing countries, and abuses in the calculation of the premium in bilateral agreements.
9. The elaboration of studies at a regional level referred to traffic sensitivity from and to developing countries, with the incorporation of a network externality premium and the assessment of potential subscribers and investments in developing countries.
10. An analysis of the results of the current application of the concept of network externalities.

Further items of study can be identified later.

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