



INTERNATIONAL TELECOMMUNICATION UNION

**WORLD TELECOMMUNICATION POLICY
FORUM**

IP Telephony

Original: English

United States of America

Comments on the Second Draft Report on IP Telephony of the Secretary-General

Introduction

In Decision 498, the 2000 session of the ITU Council decided to convene the third World Telecommunication Policy Forum in Geneva, from 7 to 9 March 2001, in order to discuss and exchange views on the theme of Internet Protocol (IP) Telephony. Consistent with Resolution 2 (Rev.2, Minneapolis, 1998), this forum shall neither produce prescriptive regulatory outcomes nor produce outputs with binding force. Rather, the Policy Forum is an opportunity for Member States and Sector Members to discuss and exchange views and information on telecommunication policy and regulatory matters (Rev. 2, Minneapolis, 1998).

The comments contained below reflect the views of the United States of America on the Second Draft of the Secretary-General's Report on IP Telephony. We look forward to the Second Group of Experts meeting where we will discuss in greater detail the various contributions from interested parties that will shape the final Secretary-General's Report on IP Telephony. We expect that the final report will demonstrate that IP Telephony advances commercial opportunities and as a result, promotes economic development.

Our comments on each specific section of the Secretary-General's Draft Report dated 15 December 2001 on IP Telephony are articulated in detail below. The United States of America may choose to make further comments on material or related material found in this report at other upcoming preparatory events or at the Forum itself. It should also be understood that comments found in this report are related only to the "Second Draft of the Secretary-General's Report on IP Telephony" and do not prejudice any comments the United States of America would choose to make on related subjects in any other international organization or future international meetings.

1.0 Summary

The United States of America offers the following comments on the Summary of the Second Draft of the Secretary-General's Report on IP Telephony:

We note that the use of the terms "public Internet" and "private IP-based networks" is conflicting and creates confusion throughout the report. We offer the following suggestions in order

* **Contact:** Richard C. Beard
US Department of State

Tel: 202 647-5832
Fax: 202 647-7407
Email: beairdc@state.gov

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to clarify the use of the terms. We do this, however, understanding that the United States of America may have further comments on this point depending on the wording of the Final Report of the Secretary-General. We see this as an important issue and one that has not been accurately or constructively dealt with in the Second Draft Report.

- Paragraphs 1.2, and all other paragraphs that cite the words "public Internet" should use the term "Internet" in lieu of the term "public Internet". The word "public" has too many connotations to be used with any specificity when referring to the Internet. For example, the globally connected Internet is neither owned by the people as a whole nor is it a highly regulated entity that is funded through government mechanisms. To the extent that the Report seeks to refer to the "globally connected set of computer networks, using the Internet Protocol, sharing a common IP address space" *see* Para. 2.2, the unmodified term "Internet" most accurately reflects the size and scope of the diverse set of interconnected networks that comprise the larger Internet.
- Paragraphs 1.2, and all other paragraphs that cite the words "private IP-based networks" should use the term "managed" in lieu of the term "private". The term "private IP-based networks" does not reflect the variety of IP-based networks that utilize VoIP, some of which are not private. For example, the PSTN, a "managed" network, uses Internet Protocol technology as it uses many available technologies, where it makes technical and economic sense to do so. Similarly, corporate Intranets, also managed networks, use IP technology. And finally, Internet Service Providers offer telephony services.

We offer the following suggestions regarding the use of the terms "IP Telephony", Internet Telephony, and "Voice over IP":

- Our understanding is that "IP Telephony" in the Draft Report is intended to encompass the broad range of voice applications over IP-based networks. However, in practice, this concept is often referred to as "Voice over IP" or "VoIP." Our comments on this section use the terms "IP Telephony" and "Voice over IP" interchangeably. The Draft Report may want to adopt this practice. To implement this, the Paragraph 1.2 text that attempts to provide a rigid structural distinction between the terms "Voice over IP(VoIP)", "IP Telephony" and "Internet Telephony" should be replaced by more flexible, practical descriptions that recognize the dynamic nature of the environment in which these terms are used, such as:

Voice-over-IP (VoIP): This is the most generic term for many different types of voice (speech) communication application in which the principal transmission network or networks are IP-based networks.

IP Telephony: "IP Telephony" is frequently used interchangeably with VoIP. However, the term "telephony" has been used for within the industry to describe a set of capabilities and requirements for supporting voice, fax, and related applications.

Internet Telephony: This is a type of VoIP or IP Telephony communication in which the principal transmission network is The Internet. (Internet Telephony is also commonly referred to as "Voice-over-the-Net" (VON), "Internet Phone," and "Net Telephony" – with appropriate modifications to refer to fax as well, such as "Internet Fax"). Internet Telephony is a sub-set of VoIP/IP Telephony.

2.0 Technical Aspects of IP Telephony

The United States of America offers the following specific comments on the technical section of the Second Draft of the Secretary-General's Report on IP Telephony:

- In Sections 2.6/2.9 (as well as Sections 1.4/1.5) we suggest that the phrase “represents an ever diminishing percentage” when referring to “voice traffic” should be replaced by “is a decreasing percentage”. It is important to note that while the benefits of IP-based networks are significant as described, the evolution of IP-based networks depends upon many factors that will result in challenges that will impact the rate of network evolution. The existing global infrastructure is extensive and efforts needed to evolve these networks are significant. In the meantime, the demand for, and revenues from, voice communications will continue to be large.
- As noted above, Sections 2.7 and 2.8 should further highlight the differences between the VoIP application and voice services over the PSTN. Paragraph 2.8 should also make the point that each “voice packet” of an IP Telephony call does not completely tie up any given circuit and may travel very different routes between callers before being re-packaged.
- Paragraph 2.10 should be modified consistent with our suggestions regarding references to "public" and "private" Internet. We also believe that the last sentence in Paragraph 2.10, including the footnote, is too specific to be consistent with the overall tone of the report. Instead, this reference to "service principles" could simply be moved to Paragraph 2.23 by adding it to the parenthetical expression describing SG 2.
- Paragraph 2.13 correctly mentions the IETF's Session Initiation Protocol (SIP). However, for the reader to understand SIP, it may be necessary to provide additional explanatory text. For example, SIP can enable web developers to create advanced telephony and multimedia applications using familiar Internet protocols and web tools.

Paragraph 2.13 should also note that other standardization work is being carried out in private sector standards consortia. In addition, testing of new IP Telephony standards and innovative applications is being conducted in a cooperative manner on the networks of IP Telephony companies.

- The last sentence in Paragraph 2.14 should be modified to read “Additional standards work is needed to *promote* interoperability and to contribute to IP Telephony progress.”
- Quality of Service and its related topics are key technical parameters. References to the policy and regulatory aspects of Quality of Service in Paragraph 2.15 should be dealt with in the Policy and Regulatory sections of the Report.
- Sections 2.17 through Paragraph 2.21 focus on a very specific issue, ENUM, in a much more detailed manner than the treatment of other technical issues. Furthermore, the liaison statement referred to in Paragraph 2.20 is actually only at a Working Party level and is not at the SG 2 level as incorrectly indicated in the draft. Thus Paragraph 2.21 should be deleted since it is premature and confusing, and its consistency with the liaison statement from the Working Party left ambiguous.
- In Paragraph 2.18, the phrase “from the PSTN” should be inserted after “IP address-based network”.
- In Paragraph 2.23, we believe it would be more correct to note that ITU-T and ITU-R Study Groups are *including* in their activities IP-related standardization. Other important work continues to be conducted in these Study Groups.

3.0 Economic Aspects of IP Telephony and its Impact on Public Telecommunication Operators

With reference to the chapter on Economic Aspects of IP Telephony, the United States of America would like to acknowledge the ITU staff for its valuable use of ideas provided by the Group of Experts meetings and subsequent written comments. The recognition in the second draft of the report that IP Telephony is an application not a service is encouraging. The United States of America supports further edits to the Economic section that emphasize the broader impacts of IP Telephony networks on the economy as a whole. IP Telephony is just one of the many applications that can be provided across the Internet and we believe that IP Telephony, like e-mail or fax technologies, provides broad benefits in the larger economy of any nation.

In addition, as referenced in our comments on Paragraph 2.7, the United State recognizes that IP Telephony equipment can be less expensive and more modular than circuit switches. The result is more efficient network buildout than corresponding circuit-switched network buildout. This, in turn, also provides broad economic benefits across Member State economies. We recommend that the ITU staff consider this view when making adjustments to the second draft and modify the report accordingly. For example in Paragraph 3.1, the positive impact of IP Telephony on all networks can be more accurately reflected by changing the sentence to read “The initial driving force behind this investment has been the desire to widen and improve access to communications networks.”

The United States of America also supports the report’s acknowledgment that IP Telephony will not eliminate the need for local networks. While the report correctly notes that incumbents and new competitors may want to make future investments in IP products to carry a growing volume of data traffic and to support new applications that will integrate voice, data, or video, the United States of America believes that these investments should be regarded as complimentary rather than as substitutes for existing networks. In fact, IP Telephony is supported by local telecom networks, and can result in additional revenues for PTOs. For example in the case of computer-to-computer telephony, dial-up Internet access users rely on the PSTN. The “ITU Internet Reports 2001: IP Telephony” notes that dial-up Internet traffic as a percentage of total call minutes has increased for many telecom carriers that operate local networks. For example, the Swedish telecom carrier Telia increased its dial-up Internet traffic from 1998-99 by 38%.

In addition, other figures reveal that while the volume of IP Telephony traffic in 1999 was 4 billion minutes, individuals made approximately 6 trillion minutes of switched telephone calls in that same year (Cnet News, December 1999 & March 2000). This empirical evidence indicates that IP Telephony makes up only a small percentage of overall voice traffic. Consequently, IP Telephony is unlikely to replace traditional circuit switched calling any time in the near future. IP telephony is growing quickly, however, circuit-switched networks are generating far more revenues and seem likely to retain that edge for the foreseeable future.

Finally, future migration to IP telephony will not be driven exclusively by the pricing of international traffic as is suggested in the report. More likely, ISPs will simply continue to respond to marketplace demands reflecting end users’ requirements for greater functionality and/or voice/video/data integrated networks handling far larger volumes of traffic. Indeed, many ISPs are already simply responding to growing marketplace demands by making greater investment in their own IP platforms thereby providing voice-enabled internet access. To ISPs, providing such services has the appeal of increasing their overall efficiencies while satisfying an end-user preference.

4.0 Policy and Regulatory Issues for IP Telephony

With respect to the "Policy and Regulatory Issues for IP Telephony" section of the Second Draft of the ITU Report on IP Telephony, the United States of America believes that this section should describe some of the many sound policy reasons not to apply legacy telecommunications networks to new Internet applications. We also reiterate concern that developing a "common policy" for technological neutrality or, more generally, for the emerging IP telephony market ignores the unique regulatory, technical and social background of each Member State and encroaches on the sovereign rights of all Member States.

Below are specific comments on how the Policy and Regulatory section of the November 1 draft report of the Secretary-General could be further improved:

- Paragraph 4.5 should be reordered and inserted after paragraph 4.3. Paragraph 4.5 reflects high-level principles that are important to consider before discussing policies or posing questions. In addition, this Paragraph should note that Member States should conduct a cost/benefit analysis for achieving their objectives prior to adopting a particular policy framework.
- Paragraph 4.17, Footnote 16 incorrectly describes current U.S. policy on IP Telephony. The United States of America does not make any regulatory distinctions relevant to IP Telephony based on "the mode of network transmission." Rather, policies in the United States of America generally distinguish between basic and enhanced services.¹ In the *Computer II* proceeding, the FCC stated that a basic service consisted of "an offering, on a common carrier basis, of pure transmission capacity for the movement of information."² The FCC defined an enhanced service, by contrast, as "offering anything that is more than a basic transmission service, including: services which employ computer processing applications, that act on format, content, code, protocol or similar aspects of subscriber's transmitted information . . ."³ This distinction between basic and enhanced services has been a key principle underlying non-regulation of Internet services. The Report should correctly state the relevant regulatory distinctions that the United States of America uses in this context.
- Footnote 16 should be moved to the discussion that appears in Paragraphs 4.14-4.15 of the Report, which the policy of the United States of America most closely resembles; however, we recommend replacing the "Voice or Data" heading of this piece with "Basic or Enhanced

¹ After the adoption of the 1996 Telecommunications Act, the U.S. Federal Communications Commission (FCC) began using the terms "telecommunications" and "information" services, rather than "basic" and "enhanced" services, respectively. See 47 U.S.C. § 153(20) & (43).. It defined information services to mean "the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing or making information available via telecommunications, and [such term] includes electronic publishing, but does not include any use of any such capability for the management, control or operation of a telecommunication system or the management of a telecommunications service." It defined telecommunications to mean the transmission, between or among points specified the user, of information of the user's choosing without change in the form or content of the information as sent and received. For most purposes, the FCC equates telecommunications services to "basic" services and information services to "enhanced" services.

² See Amendment of Section 64.702 of the Commission's Rules and Regulations (Computer II), *Final Decision*, 77 FCC 2d 384 (1980), *Memorandum Opinion & Order*, 84 FCC 2d 50, *further reconsideration*, 88 FCC 2d 512 (1981) *aff'd*, *CCIA*, 693 F.2d 198 (D.C. Cir. 1982), *cert. denied*, 461 U.S. 938 (1982), *cert. denied*, 461 U.S. 938 (1983).

³ *Id.*

Services” to reflect more accurately the nature of the relevant regulatory distinction.⁴ Voice can travel over data networks and data can travel over voice networks. Because voice *is* data, we recommend replacing references to a “voice or data” distinction in Paragraphs 4.14 and 4.15 with references to a “basic or enhanced services” distinction.

- Paragraphs 4.22, 4.23 and 4.24 should address some of the sound policy reasons on which Member States might rely when choosing not to regulate IP Telephony the same way as basic telecommunications. For example, subjecting new services to legacy requirements could stifle future economic growth and the development of innovative new services.
- Paragraph 4.28 inappropriately suggests developing a common approach to technology-neutral regulation or treatment. The decision about when, or whether, to implement this principle requires careful consideration of unique regulatory, economic and technical factors that will vary in each Member State. Developing a common approach to this specific question will prove difficult. Moreover, the decision of whether or not to implement technological neutral regulation or treatment should remain a sovereign right of each Member State.
- Paragraphs 4.40, 4.41 and 4.42 recommend harmonized international regulation, agreements and procedures for the emerging IP telephony market. We caution against the use of references to developing mandatory new fora, international agreements or procedures for this emerging market, including the reference to new procedures for “the numbering plan or conventions on routing traffic and settling accounts.” As basic telecommunications services become increasingly deregulated around the world, the ITU should not recommend that regulatory principles and procedures, such as the accounting rate regime, be applied to still-evolving services, such as IP telephony.

5.0 The Development Dimension and Human Resource Development Issues

As Section 5 has recently been revised, the United States of America offers comments on the chapter's theme and proposes specific changes to the text. Below are our comments on the theme of Section 5:

- We would like to commend the ITU staff on a good first draft of this Section. We believe that this chapter should reflect a positive approach to important infrastructure transition considerations that are or will be considered by ITU Members, particularly developing and least developed countries. The primary focus of this chapter appears to be on traditional PSTN and legacy considerations related to revenue losses. A link to the economic advantages in Section 3 is important as well as to the regulatory and policy considerations in Section 4.
- Advancing infrastructure development goals also should be a primary consideration of this Section – from both a human development and technological development perspective.

⁴ As described above, the most recent terminology for the relevant regulatory distinction in the United States are the terms “telecommunications” and “information services.” It is our understanding that the terms “basic” and “enhanced” services are more widely used internationally; thus, we propose to use the terms for purposes of the ITU Report on IP Telephony.

The United States of America offers the following specific changes to the text below:

- The last sentence in Paragraph 5.7 should be changed to reflect that PTOs are employers and revenue generators in *all* countries.
- We recommend that the first sentence in Paragraph 5.8 include policy making and resource development as factors that may assist in determining a country's potential for success. Government action, i.e., policy-making, is an important factor in creating an environment that aids infrastructure (both human and physical) development.
- Paragraph 5.1 contains information that relates to chapter 4. There are many good examples of the progress that China has made with respect to deploying packet-switched infrastructures that support a host of applications. We suggest that these positive developments should be highlighted. The ITU should consider replacing the example used in Paragraph 5.1
- The use of the word "hostile" in Paragraph 5.2 would not appear to be the best choice of words.
- In Paragraph 5.4, we suggest that the first sentence should read, "Net settlement payments, *originating* from developing countries..." so as not to suggest settlement out-payments are paid to countries rather than to operators.
- Paragraph 5.6 should recognize the important consideration that countries will have to make as they build out their infrastructure. Indeed, there are challenges presented by new technologies, but applications like IP Telephony do present policy opportunities to lay the groundwork for the introduction of technologies as they develop.

Having made these substantive changes, we recommend that Paragraphs 5.7 - 5.10 be moved to the beginning of Section 5. Paragraph 5.1 should become Paragraph 5.5.