

**NOTICE**  
23 JULY 2004

**A DISCUSSION PAPER ON  
VOICE OVER INTERNET PROTOCOL (VoIP)**

As part of the process of public consultation on legal, policy, technical and other issues relating to Voice over Internet Protocol mandated by DOTC Memorandum dated November 25, 2003, the National Telecommunications Commission (NTC) posts at its website A Discussion Paper on Voice over Internet Protocol (VoIP) for comments/inputs from industry players and other interested parties to any and all issues discussed in said paper.

Comments/inputs received will be taken into consideration by the Commission, together with other earlier comments/inputs from the public, and/or other internal papers/documents/studies at NTC's possession, in drafting, conducting public hearings on, and the issuance of Rules to Govern the Deployment and Use of VoIP by businesses and the general public.

Comments from industry stakeholders and other interested parties in relation to any and all issues raised in the Discussion Paper should be sent (in both hard copy and electronic formats) on or before **August 30, 2004** to: Director, CCAD, NTC copy furnished all Commissioners.

All Comments/inputs by the submitting party at the time of submission, will be made publicly available at the NTC and shall be posted on the NTC website ([www.ntc.gov.ph](http://www.ntc.gov.ph)).

**RONALD OLIVAR SOLIS**  
Commissioner

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## I. INTRODUCTION

### A. Rationale and Legal Basis

Consistent with the Constitutional recognition of the vital role of communications in nation-building,<sup>1</sup> the Public Telecommunications Policy Act of the Philippines (R.A. 7925) identified the development and maintenance of “a viable, efficient, reliable and universal telecommunication infrastructure **using the best available and affordable technologies**”<sup>2</sup> as its fundamental objective.

Congress also sought to provide universal access,<sup>3</sup> and explicitly prioritized “**improving and extending basic services to areas not yet served**,” and promoting “a fair, efficient and responsive market... **with emphasis on the accessibility by persons to basic services in unserved and underserved areas at affordable rates.**”<sup>4</sup>

It is within this Constitutional and policy framework that the Department of Transportation and Communications (DOTC) – noting the emergence of Voice Over Internet Protocol (VoIP) “as a viable, cost-effective technology that could serve as an alternative to the prevailing system of circuit switched phone services,” as well as the “public clamor” for legal and regulatory clarity on VoIP – issued a Memorandum dated November 25, 2003 and ordered the National Telecommunications Commission (hereinafter “the Commission”) to

1. Determine the regulatory implications of using VoIP as an available and affordable technology that may be used to improve and extend services to unserved and underserved areas, and help achieve universal access to information and communication services;
2. Conduct public hearings and consultations with concerned stakeholders including, but not limited to, public telecommunications entities, internet service providers, cable operators, ICT entrepreneurs and investors and other interested parties, for the purpose of obtaining wide feedback on procedures, rules and regulations for VoIP; and to
3. Promulgate the necessary implementing rules and regulations and guidelines – consistent with the foregoing, and particularly, the principles and objectives of fair and equitable competition, and increased consumer choice and welfare – that will govern the deployment and use of VoIP by businesses and the general public.

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<sup>1</sup> 1987 Constitution, Art. II. Sec. 24.

<sup>2</sup> RA 7925, Sec. 4(a).

<sup>3</sup> **Universal Access** refers to the availability of reliable and affordable telecommunications service both urban and rural areas of the country. (NTC MEMORANDUM CIRCULAR No.: 8-9-95. Sec 001 [Definitions])

<sup>4</sup> RA 7925, Sec. 4(b)

This Discussion Paper on VoIP is, therefore, being discussed by the Commission, pursuant to the aforementioned DOTC Memorandum, as part of the process of public consultation on legal, policy, technical and other issues relating to VoIP.

In addition to helping to develop a full and complete record, Comments received will be taken into consideration by the Commission in drafting new rules and/or guidelines to govern the deployment and use of VoIP by businesses and the general public.

Draft rules and/or guidelines shall be the subject of public hearings to be scheduled by the Commission after receiving Comments, prior to the final issuance of VoIP rules for the Philippine market.

## **B. NTC Objectives & Guiding Principles**

The Paper recognizes the potential economic benefits that VoIP offers in the form of greater efficiencies, lower costs and higher reliability. It believes that the use and widespread accessibility of VoIP can (a) advance the State's goal of universal access, and (b) support the deployment of broadband networks and services which represents a big part of the future of communications in the Philippines.

In deciding on the best approach to VoIP, and consistent with the Constitution and prevailing law, the Paper seeks to strike a balance between the following goals:

- ? Bringing benefits to consumers through lower prices, and promoting universal access and service to information and communications technologies, including encouragement for the wide deployment of broadband networks;<sup>5</sup> and
- ? Fostering innovation, while ensuring free and fair competition in the telecommunications market that also allows players to earn a reasonable rate of return for investments.<sup>6</sup>

While these goals are not necessarily mutually exclusive, reconciling the interests of government, telecommunications players, new entrants and the general public will not be an easy regulatory task, particularly because:

- (a) VoIP does not fit neatly within the model provided under Philippine law which has traditionally treated voice and data services differently; and

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<sup>5</sup> See RA 7925 (Declaration of Principles): "a fair, efficient and responsive market to stimulate growth and development of the telecommunications facilities and services, with emphasis on the **accessibility by persons to basic services in unserved and underserved areas of affordable rates.**"

<sup>6</sup> See RA 7925 (Declaration of Principles): "A healthy competitive environment shall be fostered, one in which telecommunications carriers are free to make business decisions and to interact with one another in providing telecommunications services, with the end in view of encouraging their **financial viability while maintaining affordable rates**"

- (b) As the Internet becomes available over virtually all technologies and platforms, from traditional fixed copper lines to satellites to mobile phones and to cable, to name just the most obvious, market dynamics are changing faster than laws and rules.

In this context, therefore, the Paper is further guided by two principles:

- **Technological Neutrality**

The Paper believes that future VoIP regulation, if at all, should neither impose nor discriminate in favor of the use of a particular type of VoIP technology, especially considering that various methods already exist, and indeed, that other methods could still be developed in the near future for accessing a VoIP network

- **Regulatory Forebearance**

It recognizes that the Commission must be careful when deciding whether or not to regulate an emerging technology or service like VoIP. Given what is admittedly a slow pace of regulatory change, the Paper is mindful that telecommunications, or more appropriately, information technology markets can easily evolve as a result not of technological innovation and economic forces, but of regulation. This possibility is one which the Paper seeks to avoid as much as possible.

## **II. A BRIEF INTRODUCTION TO VoIP**

For purposes of, and as used in this document,<sup>7</sup> Voice over Internet Protocol (VoIP) is a generic term that refers to all types of voice communication using Internet protocol (IP) technology, instead of traditional circuit switched technology. This includes use of packet technologies by telecommunications companies to carry voice at the core of their networks in ways that are not controlled by or apparent to end users.

### **A. How VoIP Works**

In a nutshell, VoIP enables users from different parts of the world to engage in voice conversations, even long distance ones, without having to pass through part or all of the telecommunications facilities. Using VoIP, a person could engage in international voice conversations without having to pass through – and pay for the use of – the international gateway facilities of telephone companies who charge much higher fees for the use of their networks.

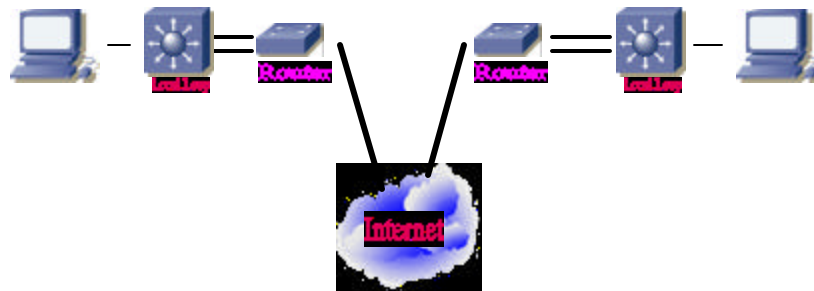
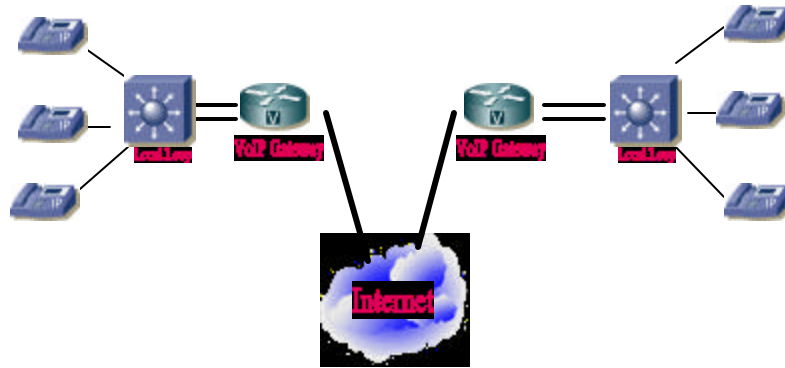
Internet telephony, on the other hand, is a specialized form of VoIP in which a regular voice telephone call is transmitted via the public Internet, thus bypassing all or part of the

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<sup>7</sup> These definitions are consistent with those used by the European Commission in its communications. (Source: Waldron and Welch. “Voice-over-IP: The Future of Communications,” Covington & Burling, Washington DC. April 29, 2002).

public switched telephone network (PSTN). Internet telephony can occur between computers, between a computer and a phone, and between phones.<sup>8</sup>

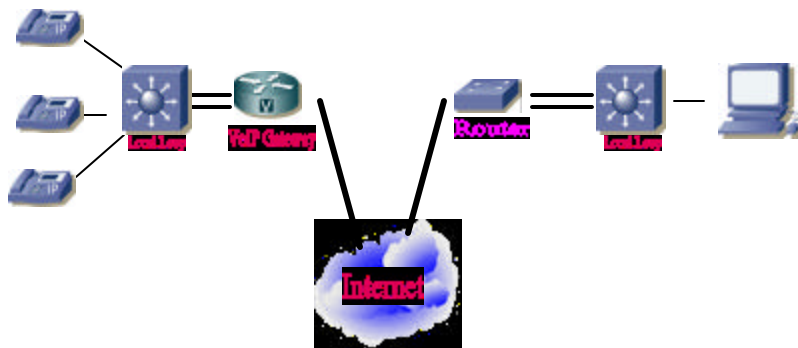
### Phone to Phone



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<sup>8</sup> This section presents only a simplified overview of what is still an evolving and complex technology and service. It is intended purely to provide background information, and is not a comprehensive treatise on the subject.

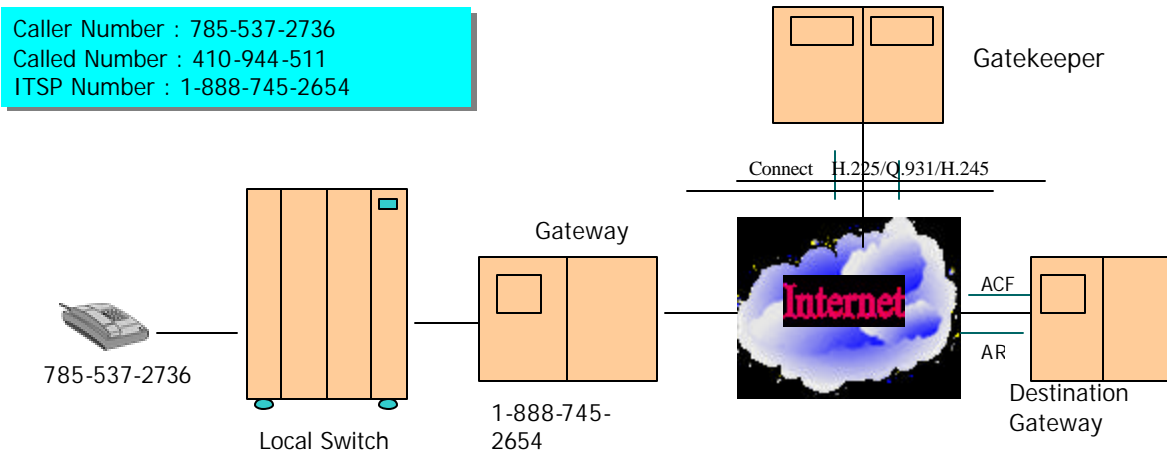
## Phone to PC / PC to Phone



Typically, a VoIP transmission is completed in the following manner:

- (a) Because all transmissions must be digital, the caller's voice is digitized. This can be done by the telephone company, by an ISP, or by a PC (or other personal machine such as a VoIP phone).
- (b) Using complex algorithms, the digital voice is compressed and then separated into packets. Using IP, the packets are addressed and sent across the network to be reassembled in the proper order at the destination. Again, this reassembly can be done by a carrier, an ISP, or by one's PC.
- (c) During the transmission on the Internet, packets may be lost or delayed, or errors may damage the packets. Conventional error correction techniques would request retransmission of unusable or lost packets, but if the transmission is a real-time voice communication, that technique obviously would not work. So, sophisticated error detection and correction systems are used to create sound to fill in the gaps. This process stores a portion of the incoming speaker's voice, and uses a complex algorithm to "guess" the contents of the missing packets and create new sound information to enhance the communication.
- (d) After the packets are transmitted and arrive at the destination, the transmission is assembled and decompressed to restore the data to an approximation of the original form.

## A Simple VoIP Call Illustration



1. Caller dials ITSP toll free number : 1-888-745-2654 ,
2. Caller gets connected to VoIP gateway of ITSP,
3. IP Address of destination gateway obtained,
4. Destination gateway makes a request to the gatekeeper to accept the call from the originator,
5. Destination gateway sends a connect confirm message.

IP technology, which works fine for sending ordinary data, may be less perfect for voice transmissions, and the quality of a voice transmission using packet technology is still considered as inferior to a circuit switched connection.

Specifically, IP technologies currently lack a guaranteed quality of service. The ordinary telephone network (if properly installed and maintained) is designed to offer end users a very high quality of service for real-time communications.

The Internet Protocol, in contrast, was not designed for voice; instead, it is based on a "best efforts" principle, which means that some packets are "lost" and have to be resent, introducing time delays and, at least in recent years, has been thought to be inconvenient for voice communications.

IP technology, however, is steadily improving and the quality gap between IP and circuit switched voice communications has now decreased to a point where any differences in quality might no longer be obvious to the ordinary listener.

### *Advantages of VoIP over traditional circuit switched technology*



- ? **Higher Reliability:** In some respects, IP networks also offer the potential for higher reliability than the circuit-switched network because IP networks automatically re-route packets around problems such as malfunctioning routers or damaged lines.

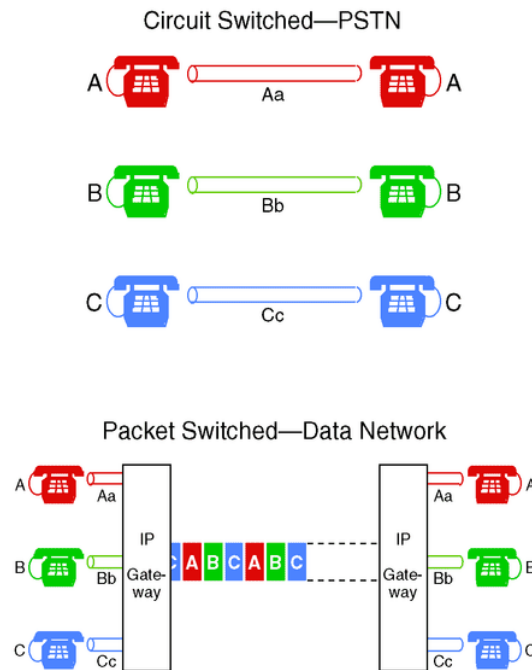
### Circuit Switched vs. Packet Switched Technologies

#### Circuit Switched Telephony

Nearly all voice traffic is circuit switched and transmitted over a PSTN. A direct connection between two connection points provides a permanent link for the duration of the call. This link cannot be used for any other purpose during this time. PSTN allows a two-way, or full-duplex, conversation to take place. The main shortfalls of circuit switching are provided by the inflexibility and inefficiency inherited in the network by requiring a dedicated connection each time.

#### Packet Switched Telephony

In a packet switched network, data is broken down into packets, each with a destination address. At the destination, the packets are reassembled and resequenced. Depending on congestion levels in the network, packets may take different routes on their way to the destination. Packet switched provides a virtual circuit connection and is generally half duplex. The main difference from the circuit switched network is that there is no dedicated connection. This is a connectionless network, which allows network resources to be used very efficiently as bandwidth can be shared between applications.



Source: Gartner. *An Introduction to Internet Telephony (or Voice over IP)* by Kathleen Adams, Kamran Bawany (31 August 2001)

- ? **Greater Efficiency:** The conventional technology of the PSTN requires a circuit between the telephone company's switch and the customer's premise to be open and occupied for the entire duration of a call, regardless of the amount of information transmitted. In contrast, on IP networks, all content -- whether voice, text, video, computer programs, or numerous other forms of information -- travels through the

network in packets that are directed to their destination by diverse routes, allowing multiple users to share the same facilities simultaneously and efficiently.

- ? **Lower Cost:** IP systems will offer a more economical means for providing communication connections. Also -- and this is one of the sources of concern on the part of incumbent voice long distance carriers -- Internet technology makes available to anyone with a personal computer and modem the ability to bypass the telco's long distance networks.
- ? **Supporting Innovation:** IP is a nonproprietary standard agreed on by hardware and software developers, and is free to be used by anyone. This open architecture allows entrepreneurial firms to develop new hardware and software that can seamlessly fit into the network. In contrast, the circuit switched network operates as a closed system, thus making it more difficult for innovative developers to build and implement new applications.

## **B. How VoIP Works as a Business**<sup>9</sup>

Different types of VoIP have different business models.

The figures in the following pages illustrate the commercial relationships and payment flows that are required for five possible models:

- ? self-provided consumer
- ? independent of internet access
- ? provided by broadband access service provider
- ? internal use on business LAN/WAN
- ? carrier internal use

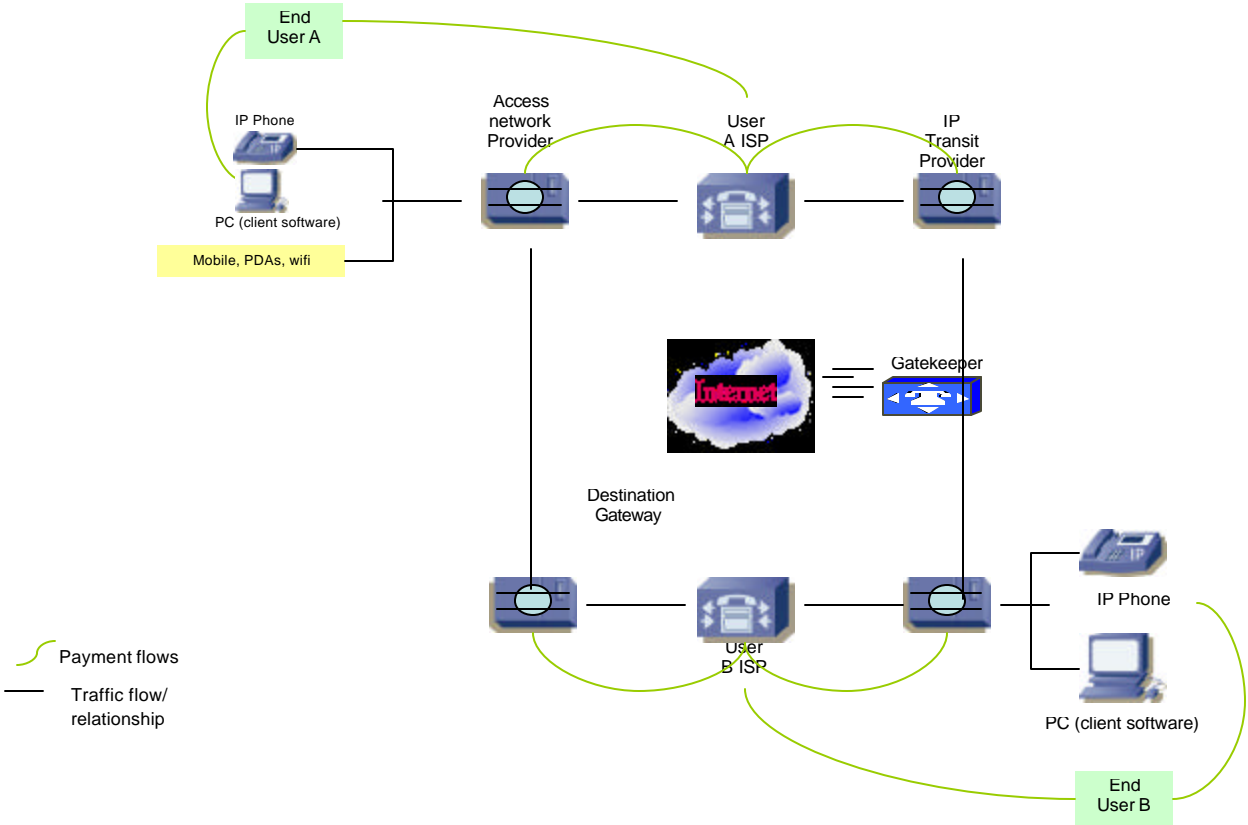
In these examples, User A is calling User B.

These examples are merely illustrative --- they do not enumerate all possible flows, and are not exhaustive of all possible models.

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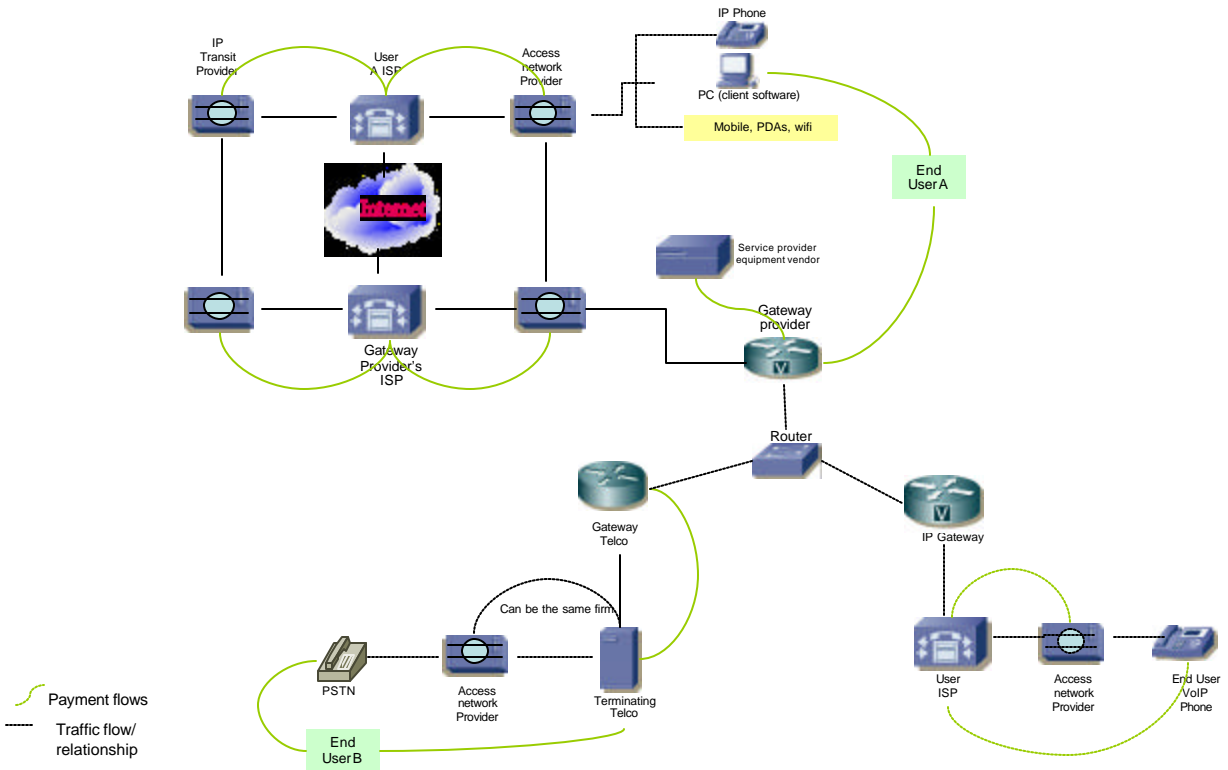
<sup>9</sup> Sourced and adapted primarily from the "Final Report for the European Commission: IP Voice and Associated Convergent Services." (Analysys Research: 28 January 2004)

# Self provided Consumer Model IP to IP calls



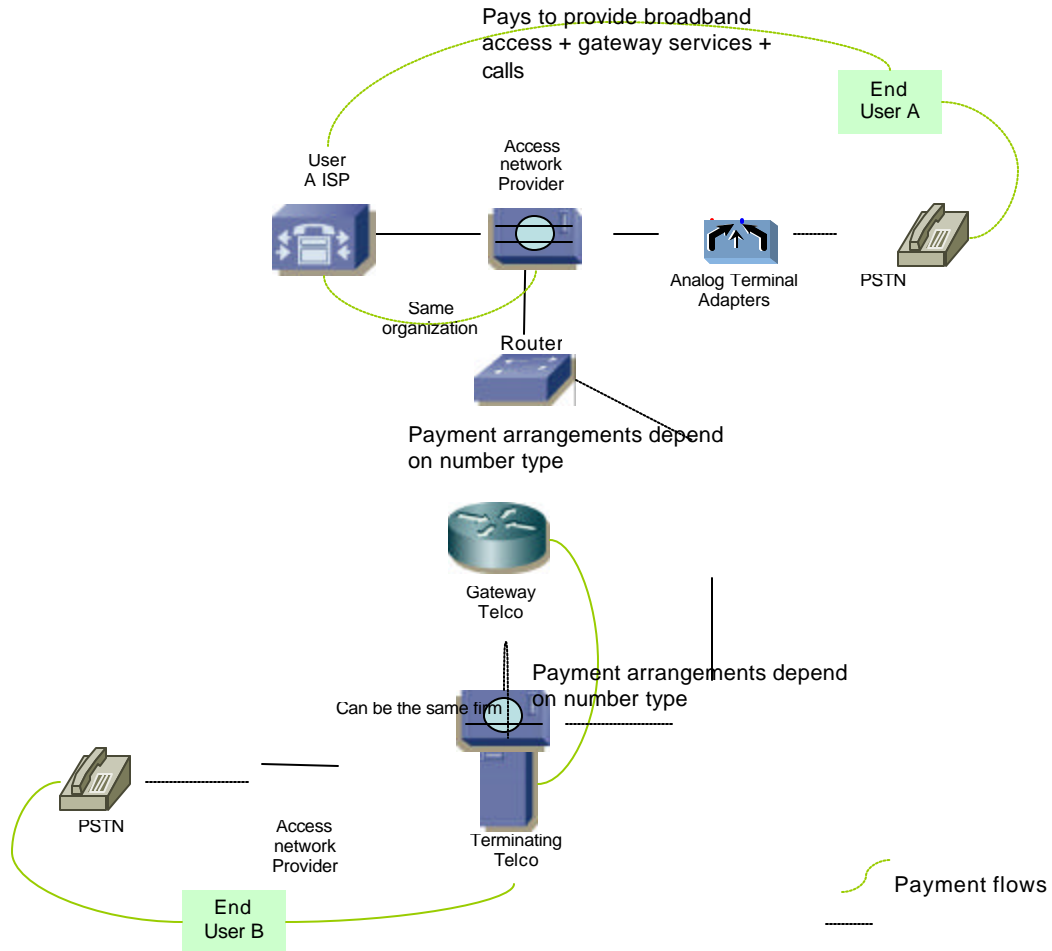
In this model, each user is a “peer” and carries his or her own costs. The users are connected via the Internet, and neither is using the PSTN to connect to the other.

## Independent of Internet Access Model IP to PSTN calls



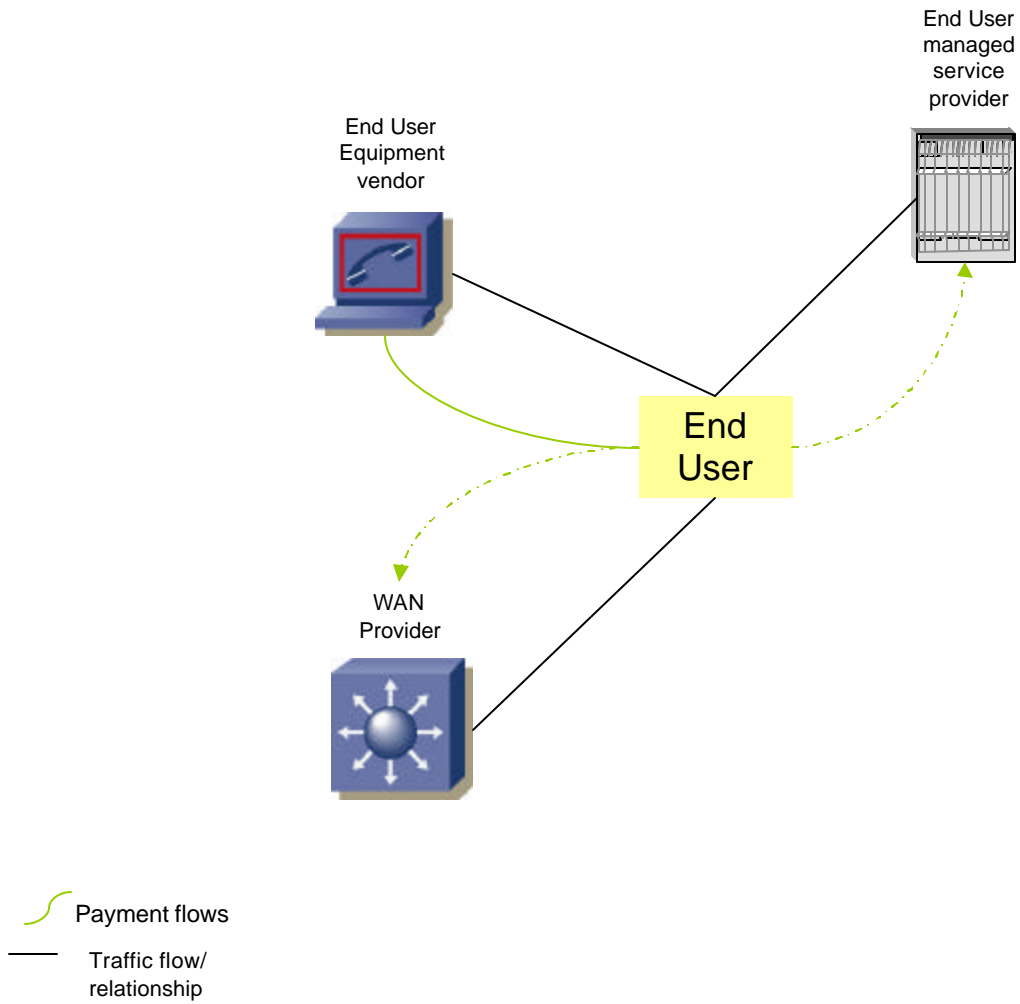
In this model, User A is calling User B who is on the PSTN. User A will have to pay a retail charge for calls to the PSTN, part of which will be used to pay the termination charges of User B's telecoms network operator. User B pays for the line rental and might ultimately have to pay to receive the call (e.g. if roaming abroad on a mobile network).

## Broadband access/cable Model IP to PSTN calls



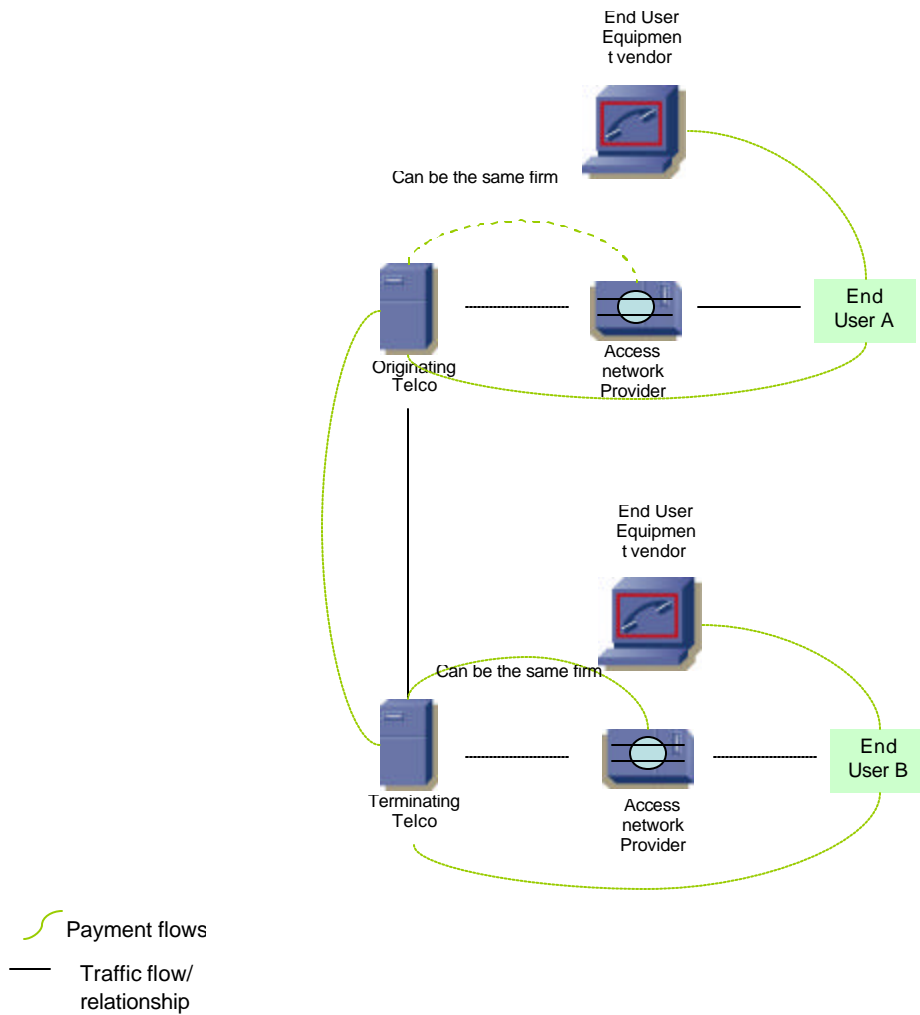
In this model, User A is calling User B who is on the PSTN. User A will have to pay a retail charge for calls to the PSTN, part of which will be used to pay the termination charges of User B's telecoms network operator. User B pays for the line rental and might ultimately have to pay to receive the call (e.g. if roaming abroad on a mobile network).

## Internal use on business WAN/LAN Model



In this model, User A and User B both work for the same organization. User A is calling User B on the corporate telephone network. Much of the cost is carried by the end user organization directly purchasing LAN and other IP equipment. The WAN element is optional, as is any external management service for the VoIP on the LAN and WAN.

## Carrier Internal Use



In this model, User A and User B are on the PSTN, but the call uses IP technology. This model, in effect, is identical to the existing PSTN business model, at least until the point where the interconnect between the two telecoms network operators can be via an interconnect using VoIP. At this point, the commercial model for the interconnect payments could be renegotiated.

### C. Current VoIP Applications

Table 1 summarizes some of the many different VoIP applications that are currently being offered, and notes the providers and users of these services. These applications are not comprehensive – mobile VoIP application, for example, are not covered – but they provide clues to the opportunities, and challenges, that are relevant to Philippine telecommunications stakeholders, including the Commission and the general public.

*Table 1: Current VoIP applications*

<b>Application</b>	<b>Provider</b>	<b>Users</b>	<b>End-user terminals</b>	<b>Benefit</b>	<b>Impact on voice market</b>
<i>Wholesale international toll bypass</i>	<i>Global operators with IP networks; Internet carriers</i>	<i>Mobile operators; corporate users</i>	<i>Phone to phone</i>	<i>Avoids high international prices charged by incumbents</i>	<i>Drives down international prices and forces liberalization</i>
<i>Core network migration to VoIP</i>	<i>Not applicable</i>	<i>Local exchange carriers</i>	<i>Phone to phone</i>	<i>Lower cost of core networks; less meshing; bandwidth efficiency</i>	<i>None</i>
<i>Corporate voice on VoIP VPNs</i>	<i>New carriers; global carriers (potentially also incumbents)</i>	<i>Multinational, multi-site organisations</i>	<i>Phone to phone (may be IP phones)</i>	<i>Low voice prices; efficient bandwidth utilisation</i>	<i>Drives down voice VPN prices</i>
<i>Low-cost voice for small businesses</i>	<i>Competing retail carriers</i>	<i>Initially multi-site SMEs</i>	<i>Phone to phone</i>	<i>Free inter-site calls; maximises benefit of broadband</i>	<i>Opens up SME market to competition; drives down prices</i>
<i>VoIP second lines for residential users</i>	<i>Competing carriers</i>	<i>High-end residential customers and teleworkers</i>	<i>Phone to phone</i>	<i>Savings on line rentals; low-cost calls</i>	<i>Drives down residential voice prices</i>
<i>Retail international toll bypass</i>	<i>Calling card companies; Internet phone companies</i>	<i>Expatriates, Overseas workers</i>	<i>Phone to phone</i>	<i>Low-cost (but often poor-quality) calls home</i>	<i>Drives down international prices</i>
<i>Free phone calls on the Internet</i>	<i>Various Web sites; hobbyists</i>	<i>Students; Internet enthusiasts</i>	<i>PC to PC</i>	<i>Free phone calls to family and friends</i>	<i>Negligible</i>
<i>Multimedia applications including VoIP</i>	<i>New carriers; global carriers incumbents systems integrators</i>	<i>Employees of corporates</i>	<i>PCs, phones or PDAs depending on application</i>	<i>Depends on application implemented</i>	<i>Negligible</i>

*(Source: Analysys Research, 2002)*



### III. The Current Legal and Policy Framework for VoIP

#### A. Policy Objectives

To emphasize, the Paper believes that technologies that use the Internet and Internet Protocol (IP) networks to deliver voice communications, particularly VoIP, have the potential to reduce consumer costs, support innovation, improve access to communications services, and increase economic productivity and growth in the Philippines.

It is therefore, asserted that any rules to be issued by the Commission for VoIP, therefore, shall be made in the context of an overall objective of broadening the availability, deployment and accessibility of VoIP as a viable, and cost-effective alternative to the prevailing system of circuit switched phone services.

This objective is consistent with the Constitution in its recognition of “the vital role of communication and information in nation-building,”<sup>10</sup> and with Congressional pronouncement, particularly through the Public Telecommunications Act of the Philippines (Republic Act No. 7925), that a “fundamental objective of government is to develop and maintain a viable, efficient, reliable and universal telecommunication infrastructure *using the best available and affordable technologies*, as a vital tool to nation building and development.” (Emphasis supplied.)

Encouraging the deployment and use of VoIP, it further recognizes, that this is also consistent with RA 7925’s policy objectives of *universal access and service*.

Pursuant to DOTC Memorandum dated November 25, 2003 (re: Voice over Internet Protocol (VoIP) Rules and Regulations), the task and challenge is to draft and issue new Rules and/or Guidelines that would encourage deployment of, and broaden access to VoIP, in a manner, that is consistent with existing law (particularly RA 7925) and public policy.

#### B. VoIP – Telecommunications Service or Value-Added (or Enhanced) Service?

There is no question that duly enfranchised public telecommunications entities (PTEs) can and are allowed, under law, to offer VoIP to the public.

In the context of converging technologies and services, it is now also possible for other non-PTE entities – for example, cable companies and ISPs – to also offer VoIP services to subscribers and the general public.

The entry of more players in the VoIP market, particularly non-PTEs, is being hampered and discouraged, however, by the lack of clarity on how such non-PTE providers can legally be allowed to offer the service in the first place. This lack of regulatory guidance,

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<sup>10</sup> Philippine Constitution, Art. II (Declaration of Principles and State Policies), Section 24.

the Paper states is hampering the development, deployment and use of VoIP products and services in the country, to the detriment of consumers and the general public, and the telecommunications industry as a whole.

RA 7925, defines “telecommunications” as

any process which enables a telecommunications entity to relay and receive voice, data, electronic messages, written or printed matter, fixed or moving pictures, words, music or visible or audible signs or any control signals of any design and for any purpose by wire, radio, or other electronic, spectral, optical or technological means.<sup>11</sup>

Only “public telecommunications entities” (PTE), defined as

any person, firm, partnership or corporation, government or private, engaged in the provision of telecommunications services to the public for compensation

may provide basic telecommunications services.<sup>12</sup>

RA 7925 also requires all persons or entities intending to commence or conduct the business of being a PTE to first obtain a legislative franchise,<sup>13</sup> and to apply for a Certificate of Public Convenience and Necessity (CPCN) from the NTC to engage in a particular telecommunications service. In the latter case, it must show that it has the legal, financial and technical fitness to operate the service.<sup>14</sup>

Under the current legal regime, Internet Service Providers are **not** considered as PTEs. They are categorized as Value Added Service (VAS) Providers, defined under RA 7925 as

(entities) which, relying on the transmission, switching, and local distribution of facilities of the local exchange and inter-exchange operators, and overseas carriers, **offer enhanced services beyond those ordinarily provided by such carriers.** (*emphasis supplied*)

Unlike PTEs, VAS providers cannot put up their own networks, although they are not required to obtain their own franchise. They are merely required to register with the NTC.

In this context, the main legal question that the Commission must resolve pertains to the legal nature of VoIP – i.e., whether it should be considered as a “telecommunications

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<sup>11</sup> RA 7925, Art. I, Sec. 3 (a)

<sup>12</sup> RA 7925, Art. I, Sec. 3 (b)

<sup>13</sup> RA 7925, Sec. 16

<sup>14</sup> Implementing Rules and Regulations for RA 7925, Rule 100(a).

service,” or as a “value added service, i.e., an “enhanced services beyond those ordinarily provided by (local exchange and inter-exchange operators, and overseas carriers).”<sup>15</sup>

The question is crucial because if VoIP is classified a value-added or enhanced service, then there would virtually be no legal restrictions on ISPs and potential providers other than PTEs to offer VoIP as a separate and distinct service for compensation to the public.

If VoIP is deemed to be a telecommunications service, on the other hand, ISPs and potential providers other than duly enfranchised and authorized PTEs can be allowed to offer VoIP for compensation, but only by entering into separate agreements with duly enfranchised PTEs.

### C. Approaches of Other Jurisdictions

The legal classification of VoIP is a regulatory puzzle that is not unique to the Philippines.

? In the *United States*, Minnesota, New York and Wisconsin have all found VoIP to be subject to state telecommunications regulation to some degree. Minnesota in 2003 ruled that Vonage’s VoIP offering is a “telecommunications service” and that accordingly, Vonage should comply with all state telecom regulations. New York found that a VoIP provider was subject to access charges. And Wisconsin requested VoIP providers to file an application for authority to provide telecom services within the state.

In contrast, Florida passed legislation largely exempting VoIP services from regulation, but that legislation did not address the applicability of access charges to VoIP offerings.

? *Canada* makes a distinction between Internet data applications, which are free from regulation, and Internet applications that provide an alternative to public switched voice services, which are regulated. IP telephony between telephones, therefore, is subject to regulation. IP telephony service providers are treated like any other telephony service providers and must contribute to universal service funds, but only if the service they provide is between telephones.

? In *Hungary*, IP telephony is allowed provided that the delay is more than 250 milliseconds and packet loss is more than 1%. Hungarian policy imposes sound quality limits to prevent IP telephony from serving as a perfect substitute for PSTN voice services.

? In *India*, VoIP is allowed, but only for communications from computer to computer.

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<sup>15</sup> RA 7925, Sec. 11.

- ? *Egypt* has granted Telecom Egypt monopoly powers for the provision of IP telephony services.
- ? In *Thailand*, the Communication Authority of Thailand (CAT) Corp which is both an operator and a regulator, has the monopoly of giving concessions to ISP providers. CAT has the sole authority to use VoIP. It now uses VoIP for its international long distance calls.
- ? *Vietnam* allows outbound Internet-based calls from computer to computer, and from computer to telephone, but prohibits inbound Internet phone calls.
- ? The *European Commission* has taken the position that Internet voice services do not constitute voice telephony unless:
  1. They are offered commercially and separately to the public as voice services;
  2. They are provided to and from PSTN termination points; and
  3. They are offered in real time at the same level of speech quality and reliability as offered by the PSTN.

The EU presently holds that VoIP does not fit the definition of telecommunications because it does not involve direct speech transport in real time. However, recent improvements in the quality of service and the growth of the European VoIP market could eventually induce the EC to review its position.

- ? *Peru's* Ministry of Transport and Communications regards VoIP as a value-added service and is not regulated under the country's Telecommunications Act
- ? Telecommunication services in *Korea* are divided into facilities based services and value added services (VAS). PC to PC and IP phone to IP phone services are considered VAS. The government regulates VoIP very lightly based on functional equivalence compared to telco services.
- ? The government of *Indonesia* issued 5 licenses of Internet Telephony for Public Services in 2002 as part of pilot project in order to form regulatory framework to implement Internet telephony.
- ? VoIP is currently not subject to detailed regulation in *Switzerland*. The key criterion in determining whether a certain type of IP telephony constitutes public telephone service under the Swiss policy is whether the service is "transmitted through direct transport and switching of speech in real time." VoIP services are not currently considered as being transmitted in real time.

#### **IV. Issues for Comment**

It is being asserted that the absence of formal rules to govern VoIP in the Philippines creates an environment of regulatory uncertainty that may be impeding the development and use of VoIP as a viable and affordable alternative to traditional telecommunications services. Beyond PTEs, for example, potential providers of VoIP services will not be able to make rational business decisions on investment and further expansion without clear rules.

Moreover, the Paper recognizes that stepped-up government efforts to promote universal access to information and communications technology will likely include plans for wider VoIP deployment, and would benefit greatly from a more definite regulatory regime.

This section, then, identifies the policy, legal, technical and other questions and issues for which the Commission must seek input and comments from all interested parties and stakeholders, in order for the Commission to move forward in its efforts to provide regulatory clarity on this increasingly important technology/service.

##### **A. Legal and Policy Issues**

1. What, under Philippine law, is the proper regulatory classification for VoIP services (telecommunications or value-added)?
2. Who should be allowed to use, provide and/or benefit from VoIP in the Philippines? What are the tangible benefits of, or problems that may arise from expanding access to and use of VoIP in the Philippines?
3. At this time, should the NTC issue rules and/or guidelines for VoIP? Why or why not? What substantive and technical considerations should such rules and/or guidelines cover?
4. Do you agree with the following statements? Please comment:
  - ? Because technology is driven by investment, and regulation scares investment; regulation, therefore, impedes technology. Put another way, investors will not invest in VoIP or a company (other than telcos) seeking to offer VoIP, if there is even the slightest threat that such investments would be regulated in the future.
  - ? Legal definitions of “value-added service” and “telecommunications service” are irrelevant to today’s technological reality. Maintaining these distinctions into the future will do serious harm to consumers and service providers.
  - ? The NTC should allow Internet-based services to develop in an environment of minimal regulation.

## **B. Technical Issues**

1. The Paper has identified three distinct categories of Internet telephony services:

- ? PC to PC
- ? PC to phone
- ? Phone to phone IP Telephony

Taking into consideration market and technological developments, are there other categories that should be considered?

2. From a regulatory standpoint, should the various categories mentioned be subject to similar or different treatment?
3. The Paper believes that the cost of the PSTN should be borne equitably by those who use it in similar ways. How should VoIP service providers who use any or all parts of the PSTN be charged? How should such charges, if any, be computed or assessed? Note that by seeking comment on whether access charges should apply to VoIP, the Paper is not addressing the issue of whether charges should apply or not apply under existing law and rules.
4. If VoIP is classified as a telecommunications service, should access charges for it be different from those paid by non-IP-enabled telecommunications service providers? If so, how should different charges be computed and assessed?
5. What should the NTC do to facilitate interconnection between IP-based and circuit-based networks, and ensure technical compatibility?
6. Do you agree with the following statements? Please comment:
  - ? Quality of services standards cannot be guaranteed by today's IP technology.
  - ? Bundled services that combine voice and data conveyed over high speed IP networks should be considered value-added services, even where the "voice" component of such services are the decisive driver for subscriptions.

## **C. Other Issues**

1. In the case of VoIP, is there such a thing as a "dominant player?" Or should all players, particularly fixed line providers, mobile operators and cable service providers, be regarded as competing not only among themselves, but with all the other players as well?
2. Do you agree with the following statements? Please comment:

- ? Internet telephony bypasses the PSTN and thus reduces the revenue of incumbents by upsetting long distance use, and the international settlement payment mechanism.
- ? Networks remain capital intensive, with long payback periods. Operators – either incumbents or new entrants such as mobile and cable operators – must achieve an acceptable return on capital, or they will not invest.
- ? Telephone companies, as the chief providers of broadband, are in the best position to profit from the public’s switch to Internet telephony. The calls may be free, but the bandwidth is not. Thus, telecommunications companies can easily make Internet telephony seem attractive, and a prime source of profits.
- ? Telecommunications companies are obliged under RA 7925 to provide local exchange or fixed line services to unserved and underserved areas in urban and rural areas, an obligation that ISPs and other potential VoIP providers are not subjected to. Allowing the latter to provide VoIP will therefore subject public telecommunications entities to unfair competition.

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