



## Regional seminar on costs and tariffs for telecommunication services

**Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo**



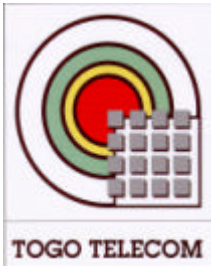
## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

**Abossé AKUE-KPAKPO**  
Telecommunication Manager  
**Head, Internet and Company Offer Division**

**Tel.: (228) 221 68 54/904 01 81**

**Fax: (228) 221 88 36**

**E-mail: abosse.akue@togotel.net.tg**



## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

### I - Introduction of IP telephony

### II - The costs of switched and IP networks

### III - Impact of VoIP on the price of telephone services in Togo



# Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

## I – Introduction to IP telephony

### I.1 – Preliminary information

### I.2 – Possible definition

### I.3 – Different forms



## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

### Preliminary information

**PSTN**

**Reliable**

**High quality voice transmission**

**IP**

**Relatively reliable**

**Acceptable quality of transmission**



## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

### Preliminary information

#### **PSTN**

**Real or synchronous time**

**Simultaneous conversation between two points on Earth**

#### **IP**

**Differed or asynchronous time**

**Connectionless mode**



## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

### Definition

**Generally speaking, Internet telephony refers to voice transmission over the public Internet network.**



## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

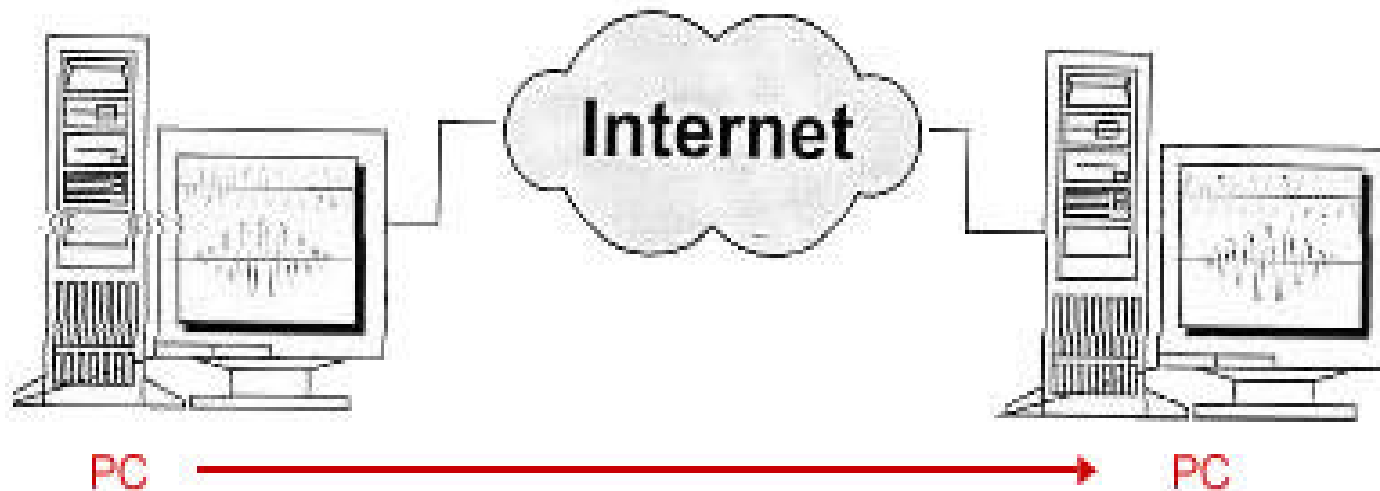
### Definition

**Voice on the IP network (VoIP) refers to voice transmission using the Internet protocol. The IP network used in this case can be private or public.**



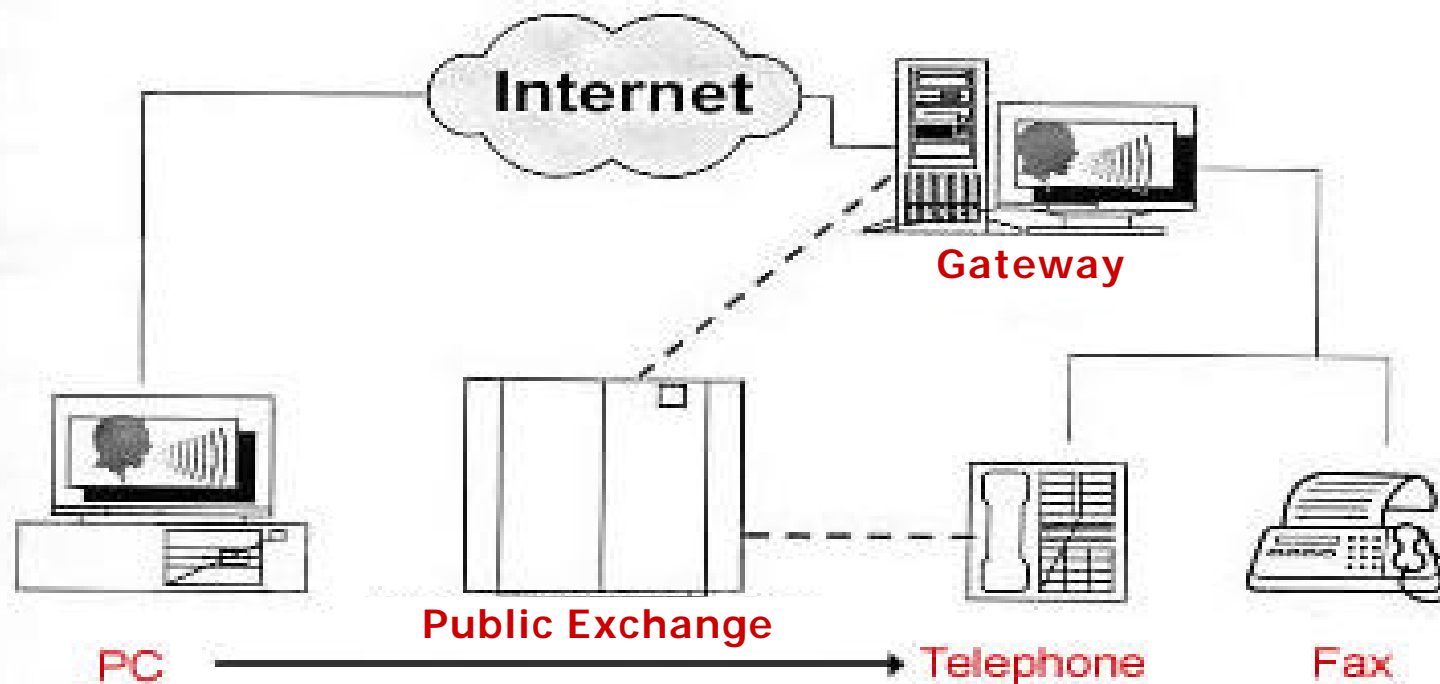
## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

### Forms

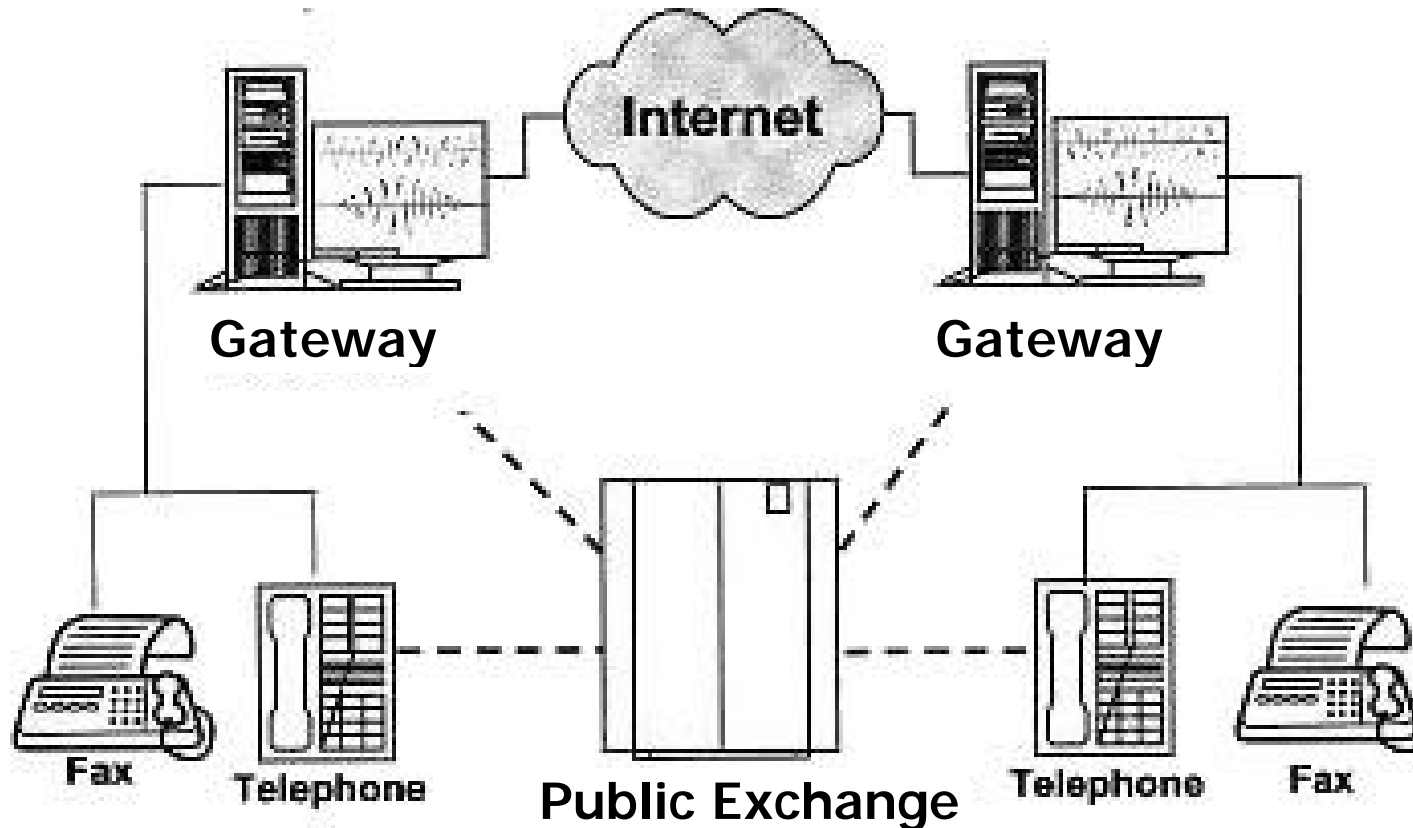


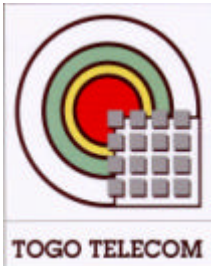
## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

### Forms



## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo





## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

### II – The costs of switched and IP networks

#### II.1 – Technical aspects of switched and IP networks

#### II.2 – Comparison of the costs of switched and IP networks

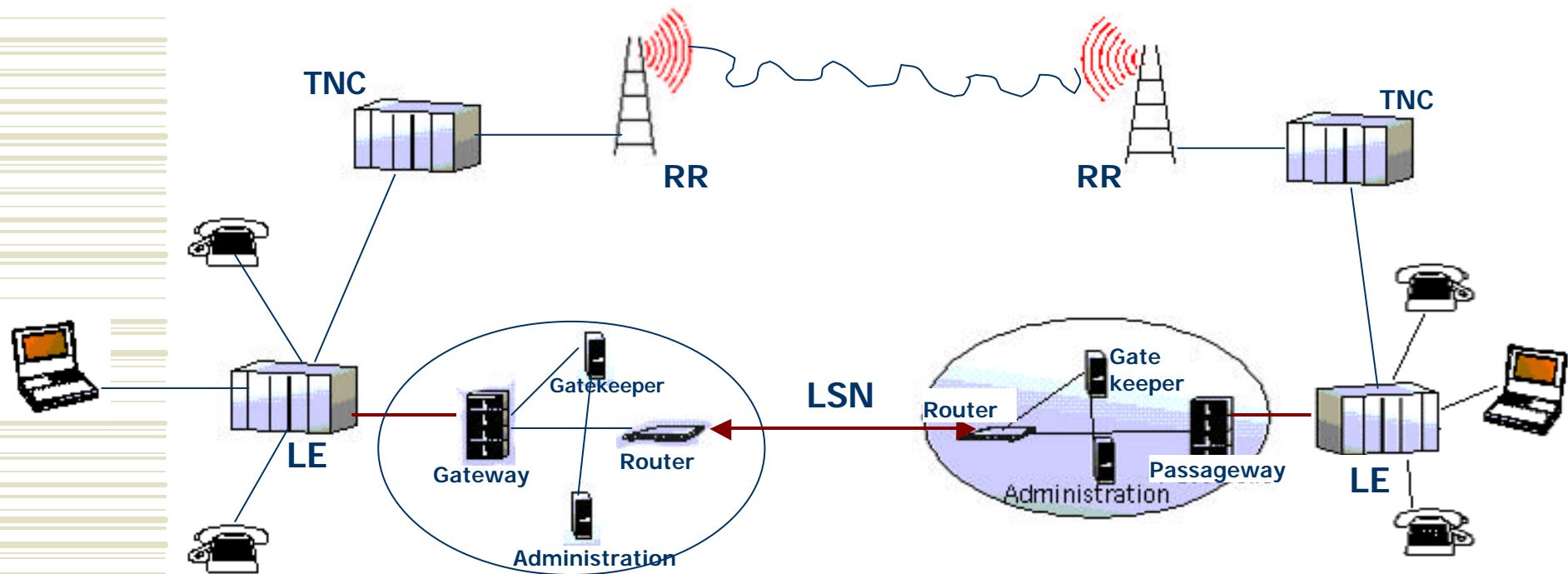
#### II.3 – Price of the national and international telephone services



## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

**Diagram of the network providing national service for switched and IP networks**

## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

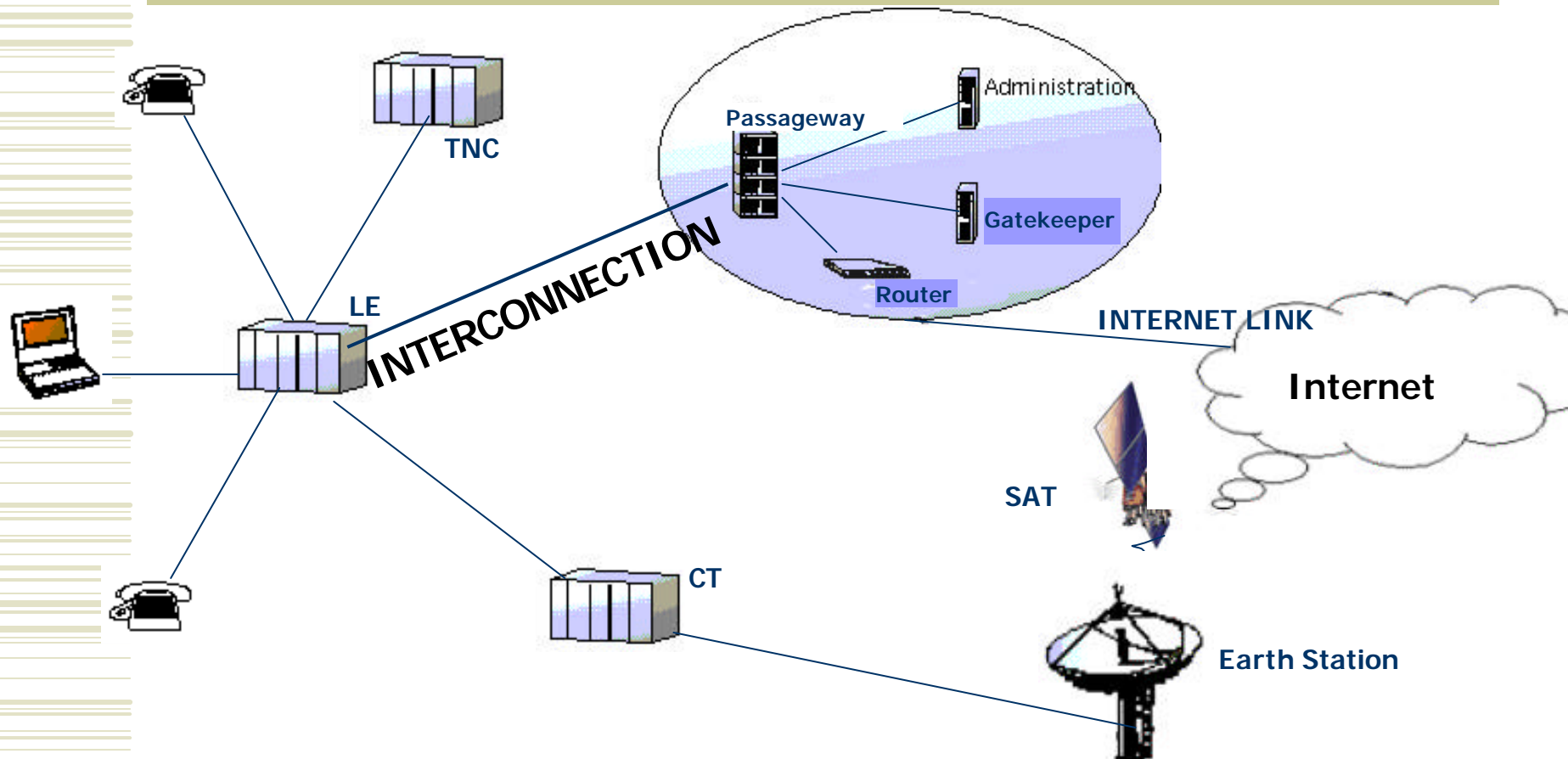




## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

**Diagram of the network providing international service for switched and IP networks**

## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo







## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

### II.2 – Comparison of the costs of switched and IP networks

Is the IP network cheaper than the switched network?

Yes, for two main reasons:

By virtue of design

By virtue of how it functions



## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

### II.2 – Comparison of the costs of switched and IP networks

#### 1 – By virtue of design

The IP network is designed to provide minimal quality in a best-effort spirit and competitive environment.

The switched network was built to provide maximum quality in a monopoly environment.



## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

### II.2 – Comparison of the costs of switched and IP networks

2 – By virtue of the way it operates

The IP network is a shared resource network.

The PSTN is a network that uses dedicated resources.



## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

### II.2 – Comparison of the costs of the PSTN and IP

Switched network	Packet-based network	Comparative advantage
Access network	Use of the PSTN	No comparative advantage possible. The Internet telephony access network uses both components of the PSTN
Trunk switching		
National transmission	Internet link	Possible advantage
International switching	Transfer network	Possible advantage
International transmission	Internet link	Possible advantage
Overhead	Overhead	Possible advantage



## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

### III – Impact of VoIP on the price of telephone services in Togo

#### III.1 – Togo's experience of VoIP

#### III.2 – Impact of VoIP on national and international service prices

#### III.3 – The future of VoIP in Togo



## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

### III.1 – Togo's experience of VoIP

**1996** The first Internet node is opened in Togo

**1997** Appearance of Internet telephony in the PC-to-telephone form

**1998** Significant expansion of the service using free websites



## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

### III.1 – Togo's experience of VoIP

**1999 Appearance of the telephone-to-telephone form**

**Vigorous reaction on the part of the incumbent operator**

**2001 Statute regulating VoIP use in Togo**



## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

### III.2 – Impact of VoIP on the price of the national and international services

**Reduced turnover**

**Decrease in the collection charge for international communications**





## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

### III.2 – Impact of VoIP on the price of the national and international services

#### Fall in turnover since 1996

1997	2.86%
1998	7.34%
1999	22%



## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

### III.2 – Impact of VoIP on the price of the national and international services

#### Decrease in the collection charge for international communications



## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

Country	Year	Collection charge TOGO TELECOM	Collection charge VoIP supplier
	1998	2 250	1 200
USA	1999	1 600	600
	2000	700	300/200
	1998	4 500	1 200
Brazil	1999	1 800	800
	2000	990	400/300



Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

### III.3 – The future of VoIP in Togo (national)

The future of VoIP can go in one of two directions, depending on whether the incumbent operator manages to rebalance tariffs or not.



## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

### III.3 – The future of VoIP in Togo (national)

**If tariffs are rebalanced:**

**VoIP will not have many customers and demand for the service will be marginal.**



## Price of telecommunication services on IP networks and the impact of VoIP on the price of the national and international telephone services in Togo

### III.3 – The future of VoIP in Togo (national)

**If tariffs are not rebalanced:**

**the incumbent operator will provide the service alongside ISPs whose networks are interconnected to the PSTN.**