



## Training workshop on the software for the calculation of costs, tariffs and rates for telephone services (COSITU)

### MOBILE CASE STUDY

#### 1. OBJECTIVE

This case study allows participants, working in groups, playing role of the management team of GSMNET limited – a mobile operator to present a business case to the top management. In the case study you should:

- Have a practical opportunity to calculate unit costs for various mobile services using COSITU model.
- Calculate Access deficit
- Rebalance the tariffs
- Present a new set of tariffs and interconnect charges, which more closely reflect cost levels and network cost allocation issues

#### 2. NICARAGUA COUNTRY OVERVIEW

Located in Central America between Honduras and Costa Rica, Nicaragua covers about 130,000 square kilometres and has coastlines on both the Pacific Ocean and the Caribbean Sea. Nicaragua has coastal plains on the Atlantic side, mountains in the central interior, and a narrow Pacific coastal plain.

The climate is tropical in the lowlands and cooler in the highlands. The country is susceptible to earthquakes, volcanic activity, landslides, and occasional hurricanes.

Nicaragua has 5.1 million inhabitants, with over one-third of the population living in the countryside. The country's official language is Spanish.

Nicaragua produces agricultural products such as coffee, bananas, sugarcane, cotton, rice, corn, cassava (tapioca), citrus fruit, and beans. The country also produces beef, veal, pork, poultry, and dairy products.

Nicaragua's prolonged civil war (1978 to 1989) devastated the economy and social infrastructure, and caused high unemployment.

In addition, in October 1998, Hurricane Mitch washed away years of development progress in Nicaragua. The resulting floods and landslides killed 3,000 people and left many thousands homeless.

Despite these challenges, the country has slowly been rebuilding its economy, and the

Nicaragua government is now promoting foreign investment. The average interest rate is about 11.25% in Nicaragua Gold Cordoba (NIO). Mexico and Nicaragua signed a free trade agreement in 1997, which is expected to boost agricultural exports.

### **3. GROWTH OF MOBILE SERVICES**

The mobile operator GSMNET was licensed in 1998 (June 30) and the license was for an initial 10-year period renewable for 5 years and covering the whole country. The licence was paid as a lump sum and constitutes 99% of GSMNET's intangible assets. GSMNET has 150,000 subscribers by end of June 2002 of which 80% are prepaid customers. The second operator Ragtel cellular started operating in Jan 2001 and by June 2002 had a customer base of 96,000 subscribers 90% being prepaid. Mobile represents 75% of the total connections in Nicaragua. GSMNET's own capital is held by American investors who have obtained the agreement of the Government of Nicaragua on a return of capital of 15% in USD.

### **4. INTERCONNECTION ISSUES**

GSMNET was licensed to install and operate International gateway (transit center) on May 2001 but previously was using Telcor. Nicaragua Regulatory Authority (NRA) has imposed laws to Telcor to allow interconnection between all networks available in the country. Due to shortfalls of network infrastructure in Telcor in terms of providing interconnection links, the Mobile operators have petitioned to the regulator to be allowed to Interconnect directly. However NRA is still consulting with the relevant government bodies.

Currently the interconnection rates are negotiated on commercial basis and amicably agreed between them. The NRA is encouraging all operators to continue with the same spirit.

### **5. TARIFFS**

TELCOR was created in 199X after split of Post and Telecommunication and the mandate for regulating telecommunication tariffs shifted to the NRA. Tariffs for the Telcor (Incumbent operators) for basic voice services are regulated but mobile tariffs are not regulated.

## 6. GSMNET RETAIL TARIFFS

GSMNET has got two retail tariffs one for post-paid customers and the other for prepaid customers as shown below:

All tariffs are in Nicaragua Gold Cordoba's (NIO) and excluding VAT

Service	Prepaid (Include VAT)		Post Paid (Without VAT)	
Installation	265		265	
Monthly rental fee	NIL		50	
	Peak	Discount	Peak	Discount
	Per minute	Per minute	Per minute	Per minute
GSMNET to GSMNET	0.67	0.54	0.49	0.33
GSMNET to Telcor	1.90	1.60	1.40	1.20
GSMNET to Ragtel	2.40	2.10	2.00	1.80
GSMNET to Costa Rica and Honduras	5.80	5.77	5.50	4.30
International calls all countries	8.00	6.40	7.00	5.60

The VAT is 12% of all services.

Although prepaid customers represent 80% of the total, their outgoing traffic represent only 30% of the total traffic.

## 7. FINANCIAL STATEMENTS

### GSMNET Limited

#### Income Statement for the period ending 30<sup>th</sup> June 03

		Million NIO
Net turnover	(ii)	<u>140.5852</u>
Cost & Sales	(iii)	<u>(96.8898)</u>
Gross profit		43.6954
Other income		<u>2.5783</u>
Operating print		46.2737
Net finance costs		<u>(1.6284)</u>
Profit before taxation		44.6453
Taxation charge		<u>(9.0919)</u>
Net profit		<u>35.5534</u>

**GSMNET Limited**  
**Balance Sheet**  
**As at 30<sup>th</sup> June 03**

**Millions NIO**

**ASSETS**

Non Current Assets	
Fixed Assets	110.7312
Others	12.7558
Current Assets	
Inventories	5.6994
Trade receivables	129.0507
Cash & Bank balances	<u>1.7641</u>
<b>Total Assets</b>	<b><u>260.0012</u></b>

**EQUITY & LIABILITIES**

Capital and Reserves

Share Capital	58.5083
Revenue Reserve	47.8705

Current Liabilities

Trade payables	58.6224
Borrowings	<u>95.0000</u>

**260.0012**

**8. NOTES TO THE ACCOUNTS**

- (i) In a Nicaragua context of increasingly tough competition and uneven playing ground with some of the operators in our industry, the pressure on prices and margin increased affecting the gross profit of the company. This was partly compensated by the cost cutting measures initiated in 2002, which translated into significant decrease in expense of the company for the first half 2003 compared to previous period.

- (ii) **The result include the following:**

Revenue	Millions NIO
Revenue from services	112.4
Sale of handsets	<u>28.2</u>
	<b><u>140.6</u></b>

**(iii) Operating Costs**

The following items have been charged to GSMNET,

	Million NIO's
Selling & distribution	21.304900
Administrative expenses	25.104500
Depreciation	15.605500
Operating rentals	10.856000
Interconnect costs	10.177500
Bad debts provisions	6.649300
International payments	<u>7.192100</u>

**(iv) Administrative Costs**

The following item is included within the administrative costs.

	Million NIO's
Staff Cost	14.248500

The number of staff employed by the company at year end was 1020

**(v) Finance Costs/Income.**

	Million NIO's
Interest income	0.14
Net foreign exchange (losses/gain)	(0.81)
Interest payable	(0.54)
Other financing costs.	<u>(0.41)</u>
	(1.62)

**(vi) Share Capital**

Year ending 30.6.03	Share Capital Million NIO's
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Issued and fully paid Ordinary Shares	58.5083
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**(vii) Borrowing Costs**

The borrowing are made up as follows

	Million NIO's
5 years	19.0000
10 years	<u>76.0000</u>
	<b><u>95.0000</u></b>

**(viii) Non Current Assets**

	<b>Network Infrastructure</b>	<b>Land &amp; Building</b>	<b>Motor vehicles &amp; Equipments</b>	<b>Total</b>
<b>Cost valuation (Million NIO's)</b>				
01/07/2002	112 766 700	10 991 700	12 213 000	135 971 400
Additions	<u>27 275 700</u>	<u>542 800</u>	<u>1 221 300</u>	<u>29 039 800</u>
30/06/2003	<u>140 042 400</u>	<u>11 534 500</u>	<u>13 434 300</u>	<u>165 011 200</u>
Depreciation				
01/07/2002	21 712 000	6 785 000	10 177 500	38 674 500
Charge for year	12 891 500	<u>949 900</u>	<u>1 764 100</u>	<u>15 605 500</u>
30/06/2003	<u>34 603 500</u>	<u>7 734 900</u>	<u>11 941 600</u>	<u>54 280 000</u>
30/06/2003	<u>105 438 900</u>	<u>3 799 600</u>	<u>1 492 700</u>	<u>110 731 200</u>

The network functions include:	Depreciation time	
Transmission		
-National	0%	10 years
-International	7.03%	10 years
Switching		
-National	26.60%	15 years
-International	6.53%	12 years
Access Network	53.19%	15 years
Others	6.65%	

These figures were calculated by a "Pricing team" regrouping accountants and engineers. They analysed the depreciation file and allocated net value of each piece of equipment to the relevant network function.

GSMNET has one MSC and one International gateway base (transit center) in Nicaragua capital city.

**(ix) Inventories**

Million NIO's

Handsets & accessories	0.6785
Scratch Cards	0.4071
Starter packs	2.714
Others	<u>1.8998</u>
	<b><u>5.6994</u></b>

**(x) Receivables**

Million NIO's

Trade receivables	126.201
Less: Provisions for Bad debts.	<u>(20.355)</u>
	105.846
Prepayments	<u>23.2047</u>
	<b><u>129.0507</u></b>

**(xi) Cash & Cash equivalent**

Million NIO's

Cash & Bank	0.5428
Short term bad deposits	<u>1.2213</u>
	<b><u>1.7641</u></b>

**(xii) Payables and accrued expenses.**

Trade payables includes:

Unused Mobile Credits	51.2946
Accrued expenses.	6.1065
Others	<u>1.2213</u>
	<b><u>58.6224</u></b>

**9. ADDITIONAL INFORMATION****(i) Currency**

Nicaragua currency is Gold Cordoba's and the exchange rate changed between June 1999 and June 2003 as follows.

June 1999		June 2003	
1 USD	=	12.10 NIO	1 USD = 15.04 NIO
1 SDR	=	1.2973 USD	1 SDR = 1.3855 USD

**(ii) Network Elements**

QTY

- MSC 1
- BTS 137
- Frequency channels rented 700
- With that configuration GSMNET was able to meet the 2.5% maximum rejection rate allowed by the NRA.
- The average traffic per subscriber at peak hour is about 0.02 Erlangs
- The network users growth is about 20% a year.

**(iii) Traffic and Interconnection Rates**

FROM	TO	VIA	MINUTES	INTERCONNECT RATES
GSMNET	GSMNET	-	90,000,000	-
GSMNET	Telcor	-	25,681,700	1.07
GSMNET	International	-	313,482	See accounting rates
GSMNET	International	Telcor	346,573	6.28
GSMNET	Costa Rica & Honduras	Telcor	512,850	4.83
International	GSMNET	-	935,081	See accounting rates
International	GSMNET	Telcor	15,442	1.06
GSMNET	Ragtel	Telcor	442,853	1.63
Costa Rica & Honduras	GSMNET	Telcor	293,755	1.06
Ragtel	GSMNET	Telcor	318,782	1.06
International	Telcor	GSMNET	57,147	5.61
International	Ragtel	Telcor	800,246	4.00
Telcor	GSMNET	-	49,372,010	1.06
Telcor	International	GSMNET	1,412,547	8.17

**(iv) Total accounting rates**

GSMNET has negotiable the total symmetrical accounting rates with foreign administration as follows:

Fixed terminals SDR 0.4

Mobile terminations SDR 0.3

In 2003 the reports received by GSMNET from its international partners indicated that GSMNET's international outgoing traffic was divided equally between fixed terminal and mobile terminals.



**(v) Findings of the Pricing Team of GSMNET**

GSMNET pricing specialists have isolated a cost of 12'484'400 NIO that they were unable to objectively identify to either one or a group of services provided by the company, or to any of its functional support activities.

The customer bills are generated by a centralized computer system also in charge of other functions like payrolls, financial management, accounting, customer care, etc. The system uses a large mainframe purchased for 15'319'173 NIO that the company expects to keep for 8 years at least. The staff costs of the computer centre represent 2% of the total staff costs of GSMNET and 30% of the computer time is dedicated to the billing function which has also generated 968'440 NIO in expenses in consumables in that year. GSMNET has a small marketing section that develops new products and improves existing ones. The cost of that activity was recently estimated by a "Pricing team" at 407'100 NIO a year.

The same study estimated the annual cost of retail outlets, including personnel, depreciation and consumables at 1'764'100 NIO. The proportion of that cost exclusively due to prepaid customers (including fees paid to independent distributors) is 45%. With the recent liberalization of the sector and the rapid development of GSMNET activities, a small section was created in order to deal with international and national settlement processing. The total annual cost of the section, whose 30% of the activity is generated by its relation with other national operators, is 135'700 NIO. GSMNET international gateway is an earth station connected to the Intelsat system. The cost of rental of international direct circuits was 407'100 NIO that year; in addition, some international correspondents of GSMNET provide it with international transit service and charged 162'840 NIO that year.

The rapid development of the digital telephone network in Nicaragua, with improved quality of service, combined with strong emigration towards Mexico, the US and other LACs, creates a significant imbalance between outbound and inbound international traffic in favour of the latter. Such a situation creates the need for strong international activity in order to improve inbound settlement rates and recover excess balances. Such activities generated an annual cost of 135'700 NIO.

Facing very strong competition, GSMNET has made customer satisfaction one of its main priorities. The cost of customer care has risen significantly; 15% of the centralized computer system time is dedicated to it. As well as a further 2% of staff costs; 218'009 NIO was accounted for depreciation of computer workstations and consumables. The study mentioned above showed that 20% of customer care activity was due to requests for clarification of bills, contesting them, and moratorium negotiations. Advertisement on the one hand and R&D on the other are estimated at 135'700 NIO each. It was agreed that no provision for bad debt should be considered as relevant costs in the interconnection rate calculation exercise.