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CyMark Largo Services

Telephone Voice Billing Analysis

For ExampleCompany

Billing Period 903: March 2009

Prepared by: CyMark Largo Services
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CONTENTS

1. Overview.....	4
1.1. Overall view:	4
1.1.1. Consumption Trends:.....	5
1.1.2. Infrastructure Trends:.....	6
1.2. Per Second billing cost savings.....	7
1.3. Key Indicators	7
1.4. Key indicator per Location Category.....	8
2. Consumption.....	10
2.1. Consumption Breakdown	10
2.2. Key Indicators	11
2.3. Business vs Unknown	12
2.3.1. Business Percentage per Call Type	12
2.3.2. Business Calls by Destination Type	12
2.4. Top Branch Locations	13
2.4.1. Top Locations by Cost:	13
2.4.2. Top Locations by Cost per Channel:	13
2.4.3. Top Locations by Duration:	14
2.4.4. Top Locations by Number of Calls	14
2.5. Top Called Destinations	15
2.5.1. Top Business destinations	15
2.5.2. Top Unknown destinations.....	15
2.5.3. Top International Destinations.....	15
2.5.4. Top Mobile Destinations.....	16
2.5.5. Top National Destinations	16
2.5.6. Top Special Destinations.....	16
2.5.7. Top Destinations by single Branch	17
2.5.8. Calls to Internet Service Providers	17
2.6. Top Calls.....	18
2.6.1. Top Individual Calls to Unknown	18
2.6.2. Top Individual Calls to Business Destinations	18
2.7. Special Services.....	19
2.7.1. Special Services top costs	19
2.8. ShareCall	20
2.8.1. Top ShareCall Routes.....	20
2.9. FreeCall	21
2.9.1. Top FreeCall Routes	21
2.10. Consumption Distribution.....	22
2.11. Anomalies.....	23
2.11.1. Calls greater than 3 hours	23
2.11.2. Calls 3s and less per dialed number and branch	23
3. Infrastructure Expenditure	24
3.1. Infrastructure Expenditure Breakdown	24
3.2. Key indicators	25
3.2.1. Trends Rental	26
3.2.2. Trends Surcharges.....	26
3.3. Rental Breakdown.....	27
3.3.1. Line Rental:.....	27
3.3.2. Equipment Rental:.....	27
3.3.3. Services:	27
3.3.4. Extensions:	28

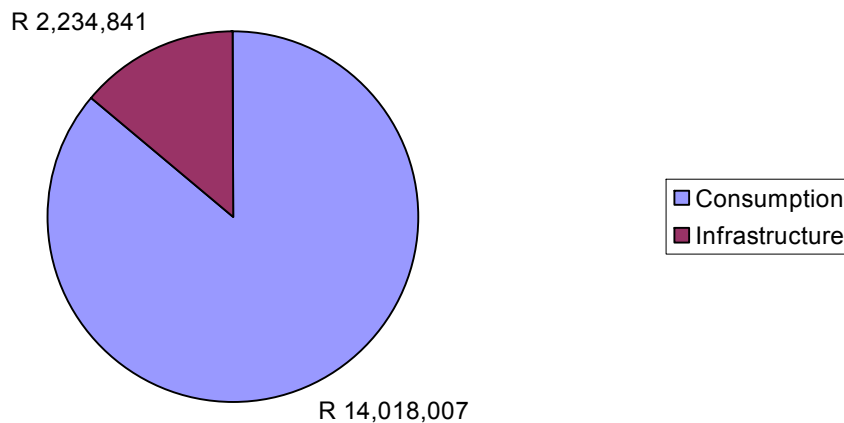
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- 3.4. Surcharge Breakdown..... 29
- 4. Traffic Analysis..... 30
 - 4.1. Traffic Statistics..... 30
 - 4.1.1. Top Erlangs per location 30
 - 4.1.2. Locations: Maximum traffic per channel 30
 - 4.1.3. Locations: Minimum traffic per channel 31
 - 4.2. Outgoing channels required 31
 - 4.2.1. Top Locations OUTGOING Channels Required 31
 - 4.2.2. Traffic Day Profile..... 32
 - 4.2.3. Traffic Date Profile 33
- 5. Conclusions and Actions 35

1. Overview

1.1. Overall view:

Total Spend



The total expenditure for the billing period ending in March 2009 (903) is R16,252,848 after discounts.

The consumption shown above consists of call usage as recorded by Telkom SA for Mobile, National (long distance), Local, Special (MaxiCall, Sharecall, 1xxx, etc), International and Other Operator destinations.

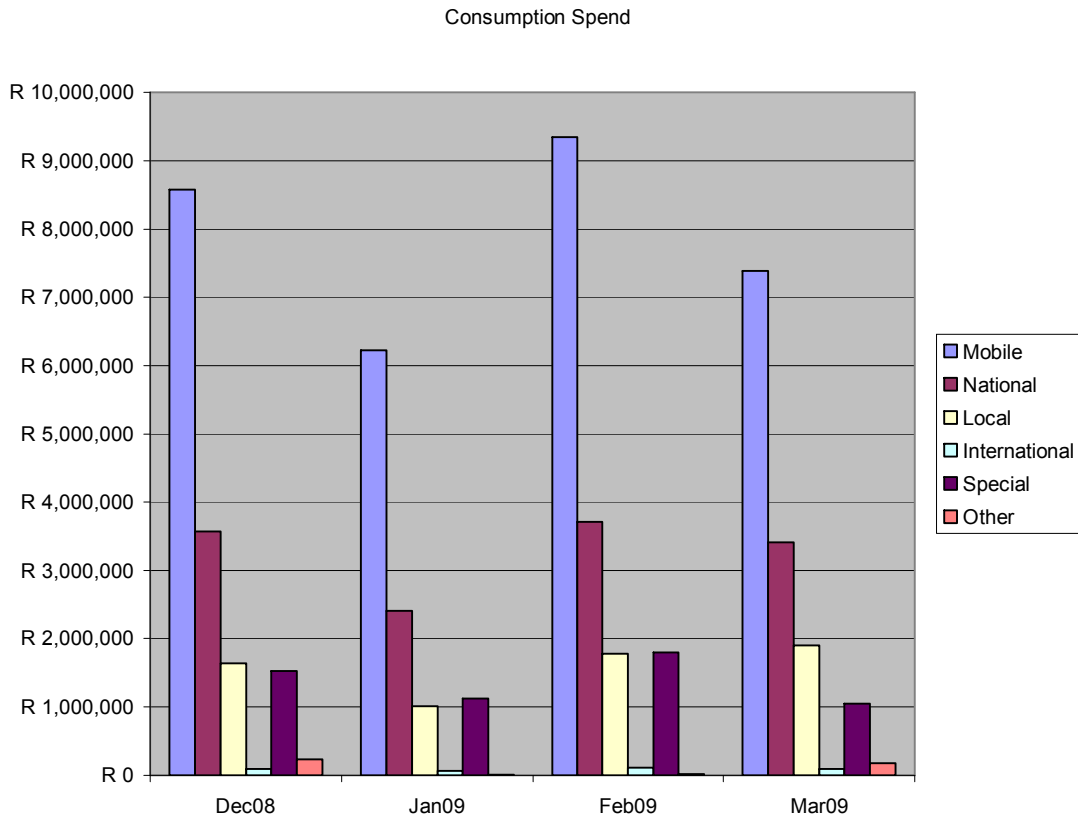
Infrastructure expenditure is provided in two main categories, namely Rental and Surcharges.

Rental in turn is categorized into four broad areas, namely Equipment rentals, indoor and outdoor Extensions, Line rentals and Service rentals.

Surcharge broad categories include, Finance charges, Installation charges, Reconnection charges and Transfer charges.

This report breaks down and analyses these costs in more detail.

1.1.1. Consumption Trends:

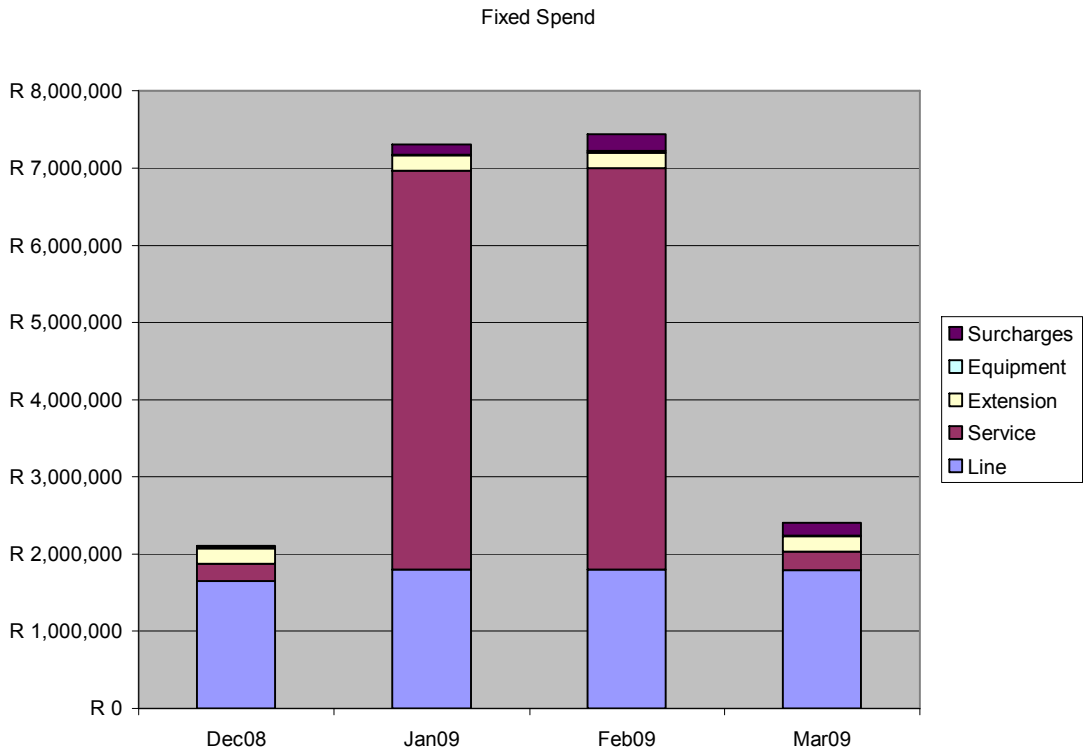


“Other” refers to VANS, NEOTEL and operators other than Mobile Network Providers.

Mobile call cost exceeds 53% of the total consumption charge. International charges are just over half a percentage point of the total expenditure.

Traditionally companies put focus on international calls, but the international call cost is negligible compared to mobile expenditure.

1.1.2. Infrastructure Trends:



Rental comprises LINE, EQUIPMENT rentals, subscription SERVICES and EXTENSIONS to equipment.

Surcharges include FINANCE costs, TRANSFERS, RECONNECTIONS and INSTALLATIONS.

See breakdown and descriptions in paragraph 3.

Exceptional Service charges in January and February were due to the two month VPN and diginet hire for HD television broadcasts to branches. Main cost was the Telkom ATM express Megaline service at R2.5m.

1.2. Per Second billing cost savings

Consumption Type	Actual Cost	Telkom STD	%Saving	Saving
Mobile	R 7,386,972	R 9,586,069	23%	R 2,199,097
National	R 3,411,865	R 3,543,083	4%	R 131,218
Local	R 1,898,088	R 2,459,714	23%	R 561,626
Special	R 1,044,823	R 1,204,184	13%	R 159,361
Other	R 180,930	R 223,687	19%	R 42,757
International	R 96,329	R 103,119	6%	-R 16,585
TOTAL	R 14,019,007	R 17,119,856	18%	R 3,077,474

The table above shows two columns defined as follows:

Actual Cost the price charged by Telkom on the basis of per second billing, before the application of consumption discounts.

Telkom Standard the price that would have been charged by Telkom on the basis of minimum fee per call (i.e. not per second from the first second), and before the application of discounts

The table therefore shows the savings due to Telkom's application of per second billing.

1.3. Key Indicators

	Dec	Jan	Feb	Mar
TOTAL COST				
Consumption	R 15,640,015	R 10,837,240	R 16,756,284	R 14,019,007
Infrastructure Costs	R 2,105,528	R 7,308,212	R 7,439,968	R 2,349,940
<i>Total voice cost per branch</i>	R 23,166.51	R 22,767.19	R 30,321.12	R 20,512.46
<i>Total voice cost per channel</i>	R 1,146.13	R 1,079.32	R 1,435.30	R 970.01
<i>Total voice cost per invoice</i>	R 10,920.33	R 10,500.84	R 13,763.51	R 9,589.31
Volumes				
Total invoices	1625	1728	1758	1707
Total branches	766	797	798	798
Total voice channels	15483	16812	16858	16875
Total Duration (minutes)	16,369,721.0	15,750,589.2	20,780,464.7	15,138,252.5
Total Calls	8,921,248	7,349,899	10,553,359	8,276,819
CONSUMPTION				
<i>Avg cost per channel</i>	R 1,010.14	R 644.61	R 993.97	R 830.76
<i>Avg cost per branch</i>	R 20,417.77	R 13,597.54	R 20,997.85	R 17,567.68
<i>Avg cost per call</i>	R 1.75	R 1.47	R 1.59	R 1.69
<i>Avg cost per minute</i>	R 0.96	R 0.69	R 0.81	R 0.93
<i>Avg duration per call</i>	1.83	2.14	1.97	1.83
FIXED				
<i>Avg cost per branch</i>	R 2,748.73	R 9,169.65	R 9,323.27	R 2,944.79
<i>Avg fixed cost per channel</i>	R 135.99	R 434.70	R 441.33	R 139.26

1.4. Key indicator per Location Category

Categories are: Head Office, Call Centre (08x), Large Centres and Branches.

Category	Nr locations	Nr Invoices	Cost	Duration	Calls
Head Office	1	7	R 6,643	11,150	4,520
Call Centre 08x	5	287	R 5,247,887	7,127,018	3,460,472
Large Centres	11	105	R 3,609,169	4,235,000	1,899,355
Branches	781	1308	R 5,155,308	6,898,473	3,528,272
	798	1707	R 14,019,007	18,271,641	8,892,619

Head Office: Johannesburg

Call Centre:

Call Centre 08x nrs – all 086, 0800 invoices

Site 1 ...

Site 2 ...

Site 3 ...

Site 4 ...

Large Centres: (Cost > R100k)

Sandton cent1

Sandton cent2

Johannesburg cent3

Durban cent4

Durban cent5

Cape Town cent6

Cape Town cent7

Johannesburg cent8

Paarl cent9

Sandton cent10

Pretoria cent11

Branches:

781 branches countrywide.

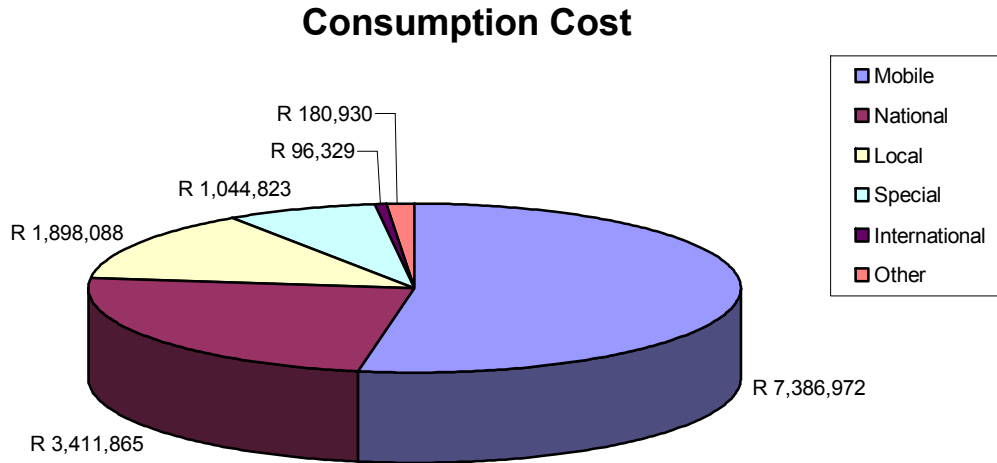
Breakdown:

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	HO	Call Centre 08x	Large Centres	Branches
TOTAL COST				
Consumption	R 6,643	R 5,247,887	R 3,609,169	R 5,155,308
Infrastructure Costs	R 5,262	R 415,144	R 683,603	R 1,269,961
Volumes				
Total accounts	7	287	105	1308
Total branches	1	5	11	781
Total voice channels	29	3763	3877	9222
Total Duration	11,150	7,127,018	4,235,000	6,898,473
Total Calls	4,520	3,460,472	1,899,355	3,528,272
CONSUMPTION				
<i>Avg cost per channel</i>	R 229	R 1,395	R 931	R 559
<i>Avg cost per branch</i>	R 6,643	R 1,049,577	R 328,106	R 6,601
<i>Avg cost per call</i>	R 1.47	R 1.52	R 1.90	R 1.46
<i>Avg cost per minute</i>	R 0.60	R 0.74	R 0.85	R 0.75
<i>Avd dur per call (min)</i>	2.47	2.06	2.23	1.96
FIXED				
<i>Avg cost per branch</i>	R 5,262	R 83,029	R 62,146	R 1,626
<i>Avg fixed cost per channel</i>	R 181.45	R 110.32	R 176.32	R 137.71

2. Consumption

2.1. Consumption Breakdown



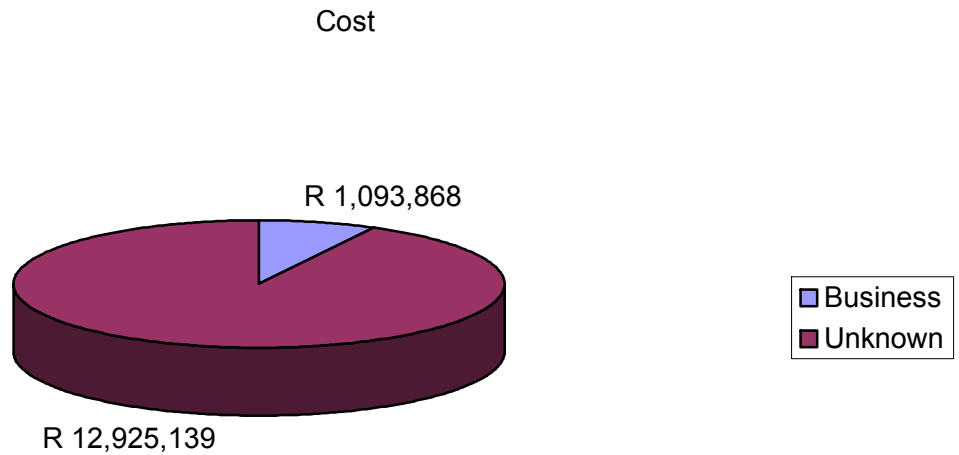
	Cost	Duration	Calls
Mobile	R 7,386,972	4,537,883.3	47,875
National	R 3,411,865	6,382,592.2	77,078
Local	R 1,898,088	4,704,148.0	90,259
Special	R 1,044,823	2,375,710.0	85,386
Other	R 180,930	194,664.3	2,194
International	R 96,329	76,638.1	3,697
TOTAL	R 14,019,007	18,271,635.9	306,489

Duration in minutes

2.2. Key Indicators

	Dec	Jan	Feb	March
TOTAL COST	R 15,633,568	R 10,833,665	R 16,756,285	R 14,019,007
Head Office	R 9,517	R 7,536	R 7,103	R 6,643
Call Centre 08x	R 6,244,277	R 4,070,024	R 6,485,431	R 5,247,887
Large Centres	R 3,994,714	R 2,368,931	R 4,151,897	R 3,609,169
Branches	R 5,385,060	R 4,387,174	R 6,111,854	R 5,155,308
TOTAL DURATION	19,902,937	13,551,977	20,780,465	18,271,641
Head Office	12,227	10,868	11,002	11,150
Call Centre 08x	8,268,126	5,479,983	8,201,223	7,127,018
Large Centres	4,590,467	2,681,075	4,782,518	4,235,000
Branches	7,032,117	5,380,051	7,785,722	6,898,473
TOTAL CALLS	9,717,483	7,015,085	10,553,359	8,892,619
Head Office	5,273	4,283	4,737	4,520
Call Centre 08x	4,154,086	2,911,048	4,550,681	3,460,472
Large Centres	2,089,150	1,275,922	2,096,933	1,899,355
Branches	3,468,974	2,823,832	3,901,008	3,528,272
AVERAGES HEAD OFFICE				
<i>Avg cost per channel</i>	R 328	R 260	R 245	R 229
<i>Avg cost per branch</i>	R 9,517	R 7,536	R 7,103	R 6,643
<i>Avg cost per call</i>	R 1.80	R 1.76	R 1.50	R 1.47
<i>Avg cost per minute</i>	R 0.78	R 0.69	R 0.65	R 0.60
<i>Avg duration per call</i>	2.32	2.54	2.32	2.47
AVERAGES CALL CENTRE 08x				
<i>Avg cost per channel</i>	R 2,701	R 1,760	R 1,711	R 1,395
<i>Avg cost per branch</i>	R 1,653,625	R 1,095,997	R 1,640,245	R 1,425,404
<i>Avg cost per call</i>	R 0.76	R 0.74	R 0.79	R 0.74
<i>Avg cost per minute</i>	R 0.76	R 0.74	R 0.79	R 0.74
<i>Avg duration per call</i>	1.99	1.88	1.80	2.06
AVERAGES LARGE CENTRES				
<i>Avg cost per channel</i>	R 802	R 476	R 1,080	R 931
<i>Avg cost per branch</i>	R 332,893	R 197,411	R 345,991	R 328,106
<i>Avg cost per call</i>	R 2.13	R 2.13	R 2.13	R 2.13
<i>Avg cost per minute</i>	R 0.87	R 0.88	R 0.87	R 0.85
<i>Avg duration per call</i>	2.20	2.10	2.28	2.23
AVERAGES BRANCHES				
<i>Avg cost per channel</i>	R 7,199	R 5,632	R 7,836	R 6,601
<i>Avg cost per branch</i>	R 660	R 537	R 665	R 559
<i>Avg cost per call</i>	R 1.55	R 1.55	R 1.57	R 1.46
<i>Avg cost per minute</i>	R 0.77	R 0.82	R 0.79	R 0.75
<i>Avg duration per call</i>	2.03	1.91	2.00	1.96

2.3. Business vs Unknown



Note Business Numbers are only recorded for numbers appearing in the business list.

2.3.1. Business Percentage per Call Type

The business number list is currently made up of two lists:
 A list containing the service numbers for ExampleCompany accounts which appear in the Telkom Billing Hierarchy, and
 a list of Company Mobile/ Suppliers /General Business numbers.

	Known Priv	Unknown	Business	%Business
Mobile	R 16,224	R 7,369,775	R 973	0.01%
National	R 0	R 3,148,506	R 263,359	7.72%
Local	R 0	R 1,658,949	R 239,139	12.60%
Special	R 0	R 454,428	R 590,395	56.51%
Other	R 0	R 180,928	R 2	0.00%
International	R 0	R 96,329	R 0	0.00%
	R 16,224	R 12,908,915	R 1,093,868	7.81%

2.3.2. Business Calls by Destination Type

	Dec	Jan	Feb	Mar
Business General	R 373,656	R 211,716	R 184,057	R 3,211
Customers	R 0	R 0	R 0	R 0
Inter Branch	R 399,816	R 787,984	R 1,151,194	R 1,073,395
Company Mobile	R 940	R 436	R 1,257	R 973
Suppliers	R 0	R 9,561	R 20,062	R 16,289
	R 774,412	R 1,009,697	R 1,356,571	R 1,093,868
Private Known	R 0	R 12,175	R 16,893	R 16,224

2.4. Top Branch Locations

The location addresses below are as shown on the Telkom invoice.

2.4.1. Top Locations by Cost:

Location	Cost	Duration	Calls
HEAD OFFICE	R 6,643.36	11,150.3	4,520
LARGE CENTRES			
Sandton cent1	R 990,280.37	1,102,636.3	486,078
Sandton cent2	R 495,367.51	545,352.4	231,388
Branches			
Parow branch	R 104,622.06	139,896.7	58,268
Soweto branch	R 57,087.81	41,938.9	68,805
Sandton branch 4	R 51,061.12	49,127.3	18,516
Nelspruit branch	R 47,780.50	52,131.1	24,254
Pretoria branch 17	R 45,087.23	54,166.6	22,302

2.4.2. Top Locations by Cost per Channel:

Note that these locations have more infrastructure than the average and some cost savings may be possible if further investigation is done.

Location	Cost/ ch	Dur/ ch	Calls / ch
HEAD OFFICE	R 1,126	1,273.5	867
LARGE CENTRES			
Pretoria cent	R 1,417.59	1,569.1	665
Sandton cent2	R 1,379.85	1,519.1	645
Branches			
Parow branch	R 1,715.12	2,293.4	955
Witbank branch 2	R 1,595.65	1,748.6	816
Boksburg branch	R 1,530.17	1,727.6	967
Soweto branch	R 1,484.81	1,810.8	822
Johannesburg branch 3	R 1,435.20	1,660.3	886

2.4.3. Top Locations by Duration:

Location	Cost	Duration	Calls
HEAD OFFICE	R 6,643.36	11,150.3	4,520
LARGE CENTRES			
Sandton cent1	R 990,280.37	1,102,636.3	486,078
Sandton cent2	R 495,367.51	545,352.4	231,388
Branches			
Parow branch	R 104,622.06	139,896.7	58,268
Edenvale branch	R 44,495.84	62,538.1	28,735
Tokai branch	R 36,694.43	57,359.7	26,127
Pretoria branch 6	R 45,087.23	54,166.6	22,302
Westville branch	R 42,505.17	52,253.9	22,414

2.4.4. Top Locations by Number of Calls

Location	Cost	Duration	Calls
HEAD OFFICE	R 6,643.36	11,150.3	4,520
LARGE CENTRES			
Sandton cent1	R 990,280.37	1,102,636.3	486,078
Durban cent2	R 362,603.27	367,597.8	248,491
Branches			
Soweto branch	R 57,087.81	41,938.9	68,805
Parow branch	R 104,622.06	139,896.7	58,268
Edenvale branch	R 44,495.84	62,538.1	28,735
Tokai branch	R 36,694.43	57,359.7	26,127
Nelspruit branch	R 47,780.50	52,131.1	24,254

2.5. Top Called Destinations

2.5.1. Top Business destinations

Nr Dialed	Destination	Cost	Dur(min)	Calls
086xxxxxx	Brch contact centre	R 129,400	389,178.5	57,555
08614yyyy	Branch Helpline	R 65,355	115,995.4	29,945
0861xxxxz	Customer Complaints	R 57,582	102,783.8	17,965
0860zzzzz	Contact Centre PROD1	R 33,474	101,600.8	37,041
0860ccccc	Contact Centre PROD2	R 33,185	101,649.1	20,410
0860dddddd	Contact Centre PROD3	R 22,772	56,561.8	277,226
0860eeeeee	Contact Centre PROD4	R 21,691	66,742.7	16,937
0860ffffff	Contact Centre PROD5	R 19,178	57,037.4	9,468
0860gggggg	Contact Centre PROD6	R 11,682	35,079.7	6,318
0860hhhhh	Contact Centre PROD7	R 11,624	35,627.8	9,132

2.5.2. Top Unknown destinations

While the numbers below do not appear in the "Business List", investigation has identified them as shown in the Destination column, where available (bold).

Nr Dialed	Destination	Cost	Dur(min)	Calls
0862000000	Automated Teleconferencing stan	R 313,091	233,737.8	10,289
0878056142	VPN	R 166,773	176,880.2	252,685
0116676614	KRUGERSDOROP modem / fax	R 162,393	318,640.4	124,124
0116676740	KRUGERSDOROP modem / fax	R 46,710	134,568.8	64,168
0117104710	JOHANNESBURG Data Callmor	R 35,143	74,452.3	11,576
0116104000	JOHANNESBURG Data Callmore	R 32,586	20,456.4	55,012
0114959596	JOHANNESBURG Callmore	R 30,402	68,269.9	3,407
0117104444	JOHANNESBURG Callmore	R 29,549	61,718.0	10,761
0860110397	ShareCall	R 28,527	82,969.1	11,216
0860100006	ShareCall	R 20,884	60,744.4	12,098

2.5.3. Top International Destinations

Nr Dialed	Destination	Cost	Dur(min)	Calls
00442072485195	Data United Kingdom peak	R 3,239	4,089.8	174
0026622312696	Lesotho peak	R 1,441	900.5	248
00442079340088	United Kingdom peak	R 1,041	1,314.8	42
00244925107982	Angola peak	R 710	287.2	33
00442072485195-l	Data United Kingdom peak	R 579	731.3	31
00263912659812	Zimbabwe peak	R 563	250.2	24
0020191571133	Egypt peak	R 522	210.9	17
00442071824408	Data United Kingdom peak	R 507	639.9	2
00442071824409	Data United Kingdom peak	R 507	639.8	2
0019064812100	United States peak	R 506	639.1	7

2.5.4. Top Mobile Destinations

While the numbers below do not appear in the "Business List", investigation has identified them as shown in the Destination column, where available (bold).

Nr Dialed	Destination	Cost	Dur(min)	Calls
082111	Vodacom Call Centre	R 5,887	3,623.3	610
0831808	MTN Call Centre	R 5,520	3,378.8	853
084140	CellC Call Centre	R 4,668	2,872.5	523
0839000032	Valentines Greeting Line	R 2,756	1,458.9	1,790
0738339090	peak	R 2,008	1,213.9	191
0712376390	peak	R 1,958	1,183.5	36
0762109201	peak	R 1,934	1,164.3	133
0722886851	peak	R 1,885	1,137.6	491
0828414802	peak	R 1,844	1,114.6	144
0765466038	peak	R 1,763	1,065.8	149

2.5.5. Top National Destinations

While the numbers below do not appear in the "Business List", investigation has identified them as shown in the Destination column, where available (bold).

Nr Dialed	Destination	Cost	Dur(min)	Calls
0116676614	KRUGERSDOROP modem / fax	R 132,985	233,238.8	91,031
01171xxxxx	xxxx	R 24,041	42,171.9	6,650
01171xxxxx	xxxxx	R 20,974	36,793.3	6,444
0114959561	JOHANNESBURG modem/fax	R 18,234	31,987.9	2,729
0313715113	JOHANNESBURG modem/fax	R 17,600	30,875.3	4,900
0114959596	JOHANNESBURG modem/fax	R 17,447	30,607.5	1,290
0115001555	JOHANNESBURG modem/fax	R 14,591	25,597.6	1,152
0116306124	JOHANNESBURG modem/fax	R 13,466	23,618.5	8,913
0114959412	JOHANNESBURG modem/fax	R 12,079	21,190.2	2,056
0115005750	JOHANNESBURG modem/fax	R 11,172	19,574.5	9,747

2.5.6. Top Special Destinations

While the numbers below do not appear in the "Business List", investigation has identified them as shown in the Destination column, where available (bold).

Nr Dialed	Destination	Cost	Dur(min)	Calls
0862000000	Automated Teleconferencing star	R 115,901	87,654.0	3,996
0860110397	Contact Centre	R 28,527	82,969.1	11,216
0860100006	ShareCall modem/fax	R 20,884	60,744.4	12,098
0860100007	ShareCall modem/fax	R 15,856	46,118.8	9,457
0861100115	ABSA Bank Codes	R 13,234	23,212.1	4,146
1023	Directory enquiries standard	R 10,857	17,378.0	18,700
0861xxxxxx	yyyy	R 7,851	13,771.6	3,069
0860yyyyyy	xssss	R 6,717	19,531.4	5,377
0861670411	UNISA Conact Centre	R 5,626	9,869.6	1,777
086111xxxxx	bbbb	R 5,416	9,500.4	1,178

2.5.7. Top Destinations by single Branch

Calling Branch	Nr Dialed	Destination	Cost	Dur(min)	Calls
Johannesburg branch 7	0878056142	peak	R 166,768	176,876	252,679
Johannesburg branch 12	0116676740	KRUGERSDORP standard	R 46,710	134,569	64,168
Sandton cent1	0862000000	Automated Teleconferencing standarc	R 42,611	31,759	1,461
Sandton cent2	0862000000	Automated Teleconferencing standarc	R 34,856	25,849	1,638
Soweto branch	0116104000	JOHANNESBURG Data Callmore	R 24,554	9,366	41,555
Durban branch 3	0862000000	Automated Teleconferencing standarc	R 22,002	16,467	587
Johannesburg branch 12	0862000000	Automated Teleconferencing standarc	R 19,008	14,079	869
Cape Town branch 4	0114959561	JOHANNESBURG standard	R 18,234	31,988	2,729
Durban branch 1	086xxxxxxx	Contact Centre	R 17,683	53,026	5,581
Johannesburg branch 12	0313715113	standard	R 17,600	30,875	4,900

These are the top numbers per branch.

2.5.8. Calls to Internet Service Providers

Total Cost: R 16,289.28
 Calls: 52,415.2 minutes
 Duration: 5817

2.6. Top Calls

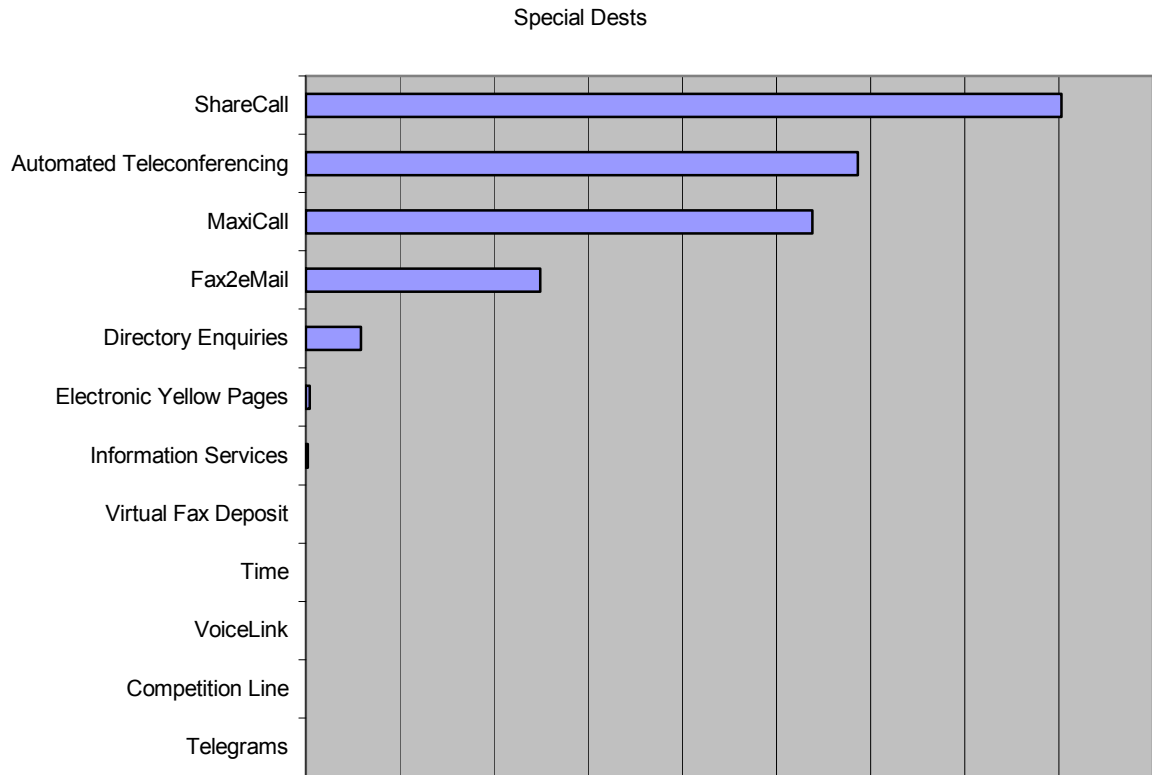
2.6.1. Top Individual Calls to Unknown

Branch	Date	Time	Cost	Dur(min)	Nr Dialed	Destination
Johannesburg cent4	18-FEB-09	08:54:57	1,211.52	1,074.20	0862000000	Automated Teleconferencing std
Johannesburg branch 12	18-FEB-09	08:55:53	1,210.29	1,073.30	0862000000	Automated Teleconferencing std
Sandton cent1	14-FEB-09	11:59:55	957.74	2,970.30	0123347607	PRETORIA Data std & CM
Sandton cent1	06-MAR-09	14:54:47	812.84	4,255.40	0116994090	KRUGERSDORP std & CM
Sandton cent2	11-MAR-09	14:00:46	792.54	750.60	0862000000	Automated Teleconferencing std
Soweto branch	12-MAR-09	13:37:45	657.19	2,873.50	0116104000	JOHANNESBURG Data std &
Soweto branch	12-MAR-09	13:37:49	657.15	2,873.40	0116104000	JOHANNESBURG Data std &
Bloemfontein branch 2	25-FEB-09	09:26:49	639.27	1,481.50	0116670964	KRUGERSDORP std & CM
Soweto branch	10-MAR-09	11:18:29	584.83	1,386.00	0214680000	Data std & CM
Welkom branch	18-FEB-09	11:27:05	426.65	1,044.10	0117718000	JOHANNESBURG Data std &

2.6.2. Top Individual Calls to Business Destinations

Branch	Date	Time	Cost	Dur(min)	Nr Dialed	Destination
Paarl cent2	27-FEB-09	11:27:58	316.70	1,440.30	0860017249	Supl_Internet Service Provider
Sandton branch	24-FEB-09	13:52:19	309.83	1,279.40	0112833000	Supl_Internet Service Provider
Sandton cent1	03-MAR-09	08:01:21	301.16	528.40	0313273030	Brch_P0959 Campus Kingsm
Paarl cent2	09-MAR-09	15:49:06	197.60	953.00	0860017249	Supl_Internet Service Provider
Sandton branch 2	26-FEB-09	08:32:45	189.38	550.80	0112833000	Supl_Internet Service Provider
Paarl cent1	23-FEB-09	08:00:38	178.64	519.60	0860017249	Supl_Internet Service Provider
Johannesburg branch 7	02-MAR-09	07:39:28	178.57	519.40	0860017249	Supl_Internet Service Provider
Johannesburg branch 4	03-MAR-09	09:18:00	177.65	516.70	0112833000	Supl_Internet Service Provider
Paarl cent1	10-MAR-09	08:02:06	175.94	511.80	0860017249	Supl_Internet Service Provider
Paarl cent1	05-MAR-09	07:47:35	170.75	496.70	0860017249	Supl_Internet Service Provider

2.7. Special Services



2.7.1. Special Services top costs

DESTINATION	COST	DURATION	NR_CALLS
ShareCall	R 160,549	482,315.6	107,353
Automated Teleconferencing	R 117,263	88,678.1	4,078
MaxiCall	R 107,629	190,430.5	62,736
Fax2eMail	R 49,783	30,691.5	16,765
Directory Enquiries	R 11,644	19,144.2	20,532
Electronic Yellow Pages	R 836	2,299.6	1,502
Information Services	R 365	268.2	117
Virtual Fax Deposit	R 103	167.6	88
Time	R 96	275.8	544
VoiceLink	R 80	140.0	68
Competition Line	R 14	6.7	6
Telegrams	R 7	20.4	8

2.8. ShareCall

Note the ShareCall analysis reports on Incoming Calls to ExampleCompany 0860 numbers (payment for the National portion of the call, for which ExampleCompany is responsible).

2.8.1. Top ShareCall Routes

SHARCALL_NR	COST	DURATION	NR_CALLS
0860xxxyyy	R 546,669	1,034,657.0	184,280
0860abcdsw	R 133,832	269,827.3	46,637
0860dsggfg	R 98,361	193,784.2	33,684
0860xxxxxx	R 50,540	105,460.4	23,852
0860dddddd	R 46,962	85,853.7	16,139
0860gggggg	R 45,313	93,744.8	24,983
0860zzzzzz	R 44,093	83,979.2	13,345
0860asfdfd	R 40,848	79,949.0	15,153
0860dddddd	R 37,682	75,539.3	15,334
0860xxxxxx	R 36,374	67,711.4	9,253

Total Sharecall NRS: 160
 Total Cost: R1,538,052
 Total CALLS: 649,902

2.9. FreeCall

Note the FreeCall analysis reports on the charges made by Telkom for any Incoming Calls to ExampleCompany 0800 FreeCall numbers. It is the call cost paid on behalf of the originator of the call.

2.9.1. Top FreeCall Routes

FREECALL_NR	COST	DURATION	NR_CALLS
0800xxxxxx	R 59,120	112,837.5	31,239
0800adfdfds	R 21,794	34,599.9	10,549
0800fhhhhh	R 11,386	21,691.0	5,681
0800hhhhh	R 9,849	17,110.0	2,560
0800nfsfff	R 4,916	9,192.7	1,876
0800adsfds	R 3,243	5,333.5	1,738
0800hhhddd	R 339	666.6	110
0800xxxwww	R 199	388.7	101
0802ouyiuyi	R 152	206.0	143
0800asfdfd	R 140	171.5	108

Total FreeCall NRS: 17
 Total Cost: R 111,335
 Total CALLS: 54,259

2.10. Consumption Distribution

	% Total Consumption
Head Office	0.0%
Call Centre 08x	37.4%
Large Centres	25.7%
Branches	36.8%
	100.0%
Branches (100%):	
Top 10	10.1%
Top 20	17.0%

The Top 10 branches, by cost, make up 10.1% of the total branch spend.
The Top 20 branches, by cost, make up 17.0% of the total branch spend.

2.11. Anomalies

2.11.1. Calls greater than 3 hours

Calling Branch	Date	Time	Cost	Dur(min)	Nr Dialed	Destination
Johannesburg branch 1	18-FEB-09	08:54:57	R 1,211.52	1,074.2	0862000000	Automated Teleconferencing
Johannesburg branch 1	18-FEB-09	08:55:53	R 1,210.29	1,073.3	0862000000	Automated Teleconferencing
Sandton cent1	14-FEB-09	11:59:55	R 957.74	2,970.3	0123347607	PRETORIA Data std & (
Sandton cent1	06-MAR-09	14:54:47	R 812.84	4,255.4	0116994090	KRUGERSDORP std &
Sandton cent2	11-MAR-09	14:00:46	R 792.54	750.6	0862000000	Automated Teleconferencing
Soweto branch	12-MAR-09	13:37:45	R 657.19	2,873.5	0116104000	JOHANNESBURG Data std
Soweto branch	12-MAR-09	13:37:49	R 657.15	2,873.4	0116104000	JOHANNESBURG Data std
Bloemfontein branch 2	25-FEB-09	09:26:49	R 639.27	1,481.5	0116670964	KRUGERSDORP std &
Soweto branch	10-MAR-09	11:18:29	R 584.83	1,386.0	0214680000	Data std & CM
Welkom branch 3	18-FEB-09	11:27:05	R 426.65	1,044.1	0117718000	JOHANNESBURG Data std

Total Nr of calls > 3hrs: 238
 Cost: R41,266
 Average per Call: R173

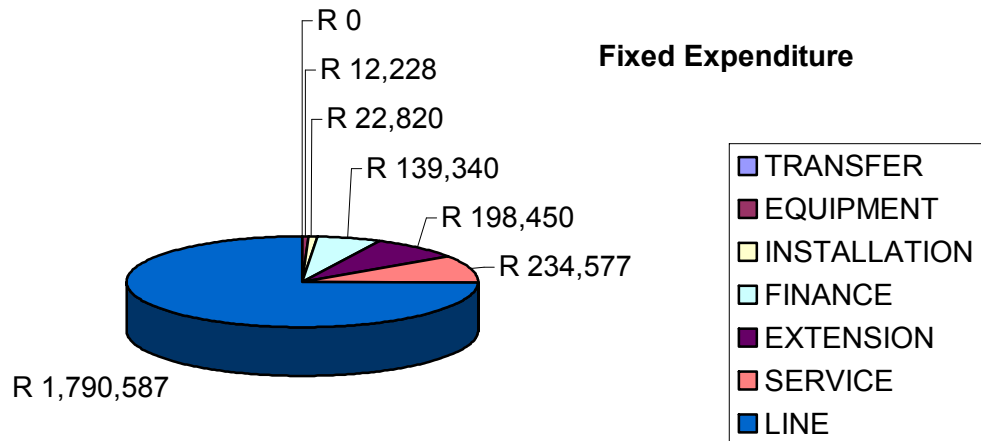
2.11.2. Calls 3s and less per dialed number and branch

Calling Branch	Cost	Dur(min)	Calls	Nr Dialed	Destination
Johannesburg cent3	R 1,567.61	2,611.8	78,350	0115850505	JOHANNESBURG peak
Soweto branch	R 21,324.27	626.8	37,411	0116104000	JOHANNESBURG Data Callmore
Sandton cent1	R 0.00	384.0	23,038	0112919600	JOHANNESBURG Data
Soweto branch	R 8,825.31	258.2	15,483	0116104000	JOHANNESBURG Data standard
Sandton cent1	R 111.84	186.4	11,184	0112919600	JOHANNESBURG Data standard
Vereeniging branch 9	R 1,826.28	55.8	3,204	0117718000	JOHANNESBURG Data Callmore
Pretoria branch 22	R 1,595.43	47.1	2,799	0116104000	JOHANNESBURG Data Callmore
Pinelands branch	R 47.40	79.0	2,616	0861101730	MaxiCall standard
Sandton cent1	R 54.47	90.8	2,505	0313715230	standard
Johannesburg branch 44	R 1,189.59	34.8	2,087	0116104000	JOHANNESBURG Data standard

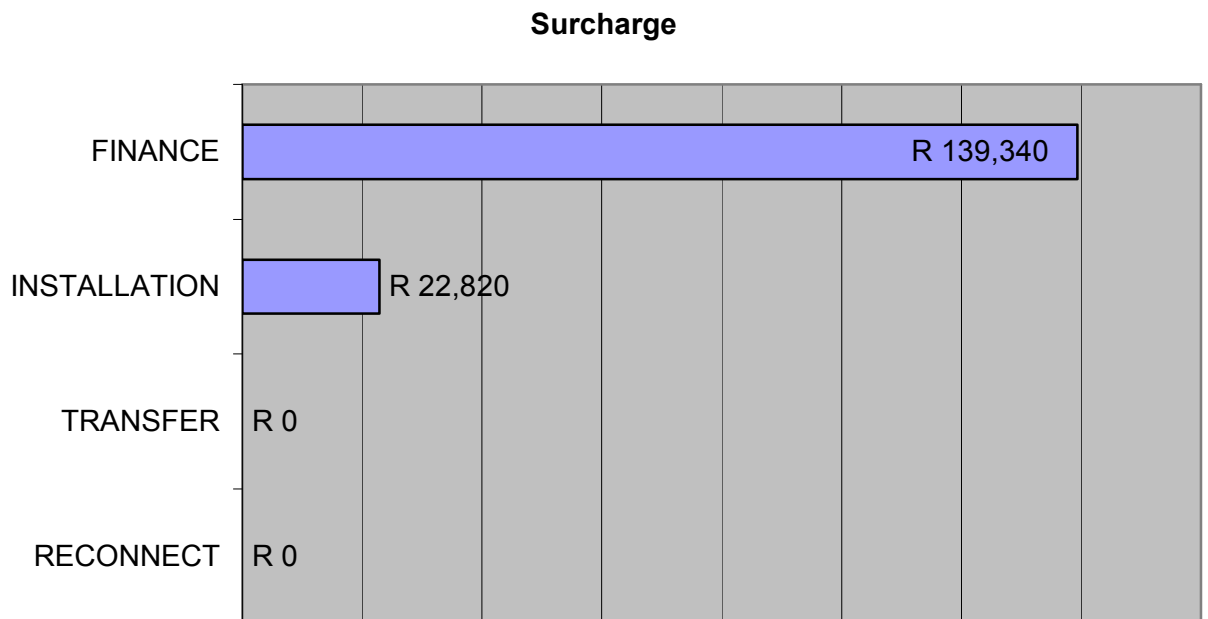
These calls indicate possible auto connect problems. E.g. a modem tries to connect, but drops the call immediately, resulting in many retries.

3. Infrastructure Expenditure

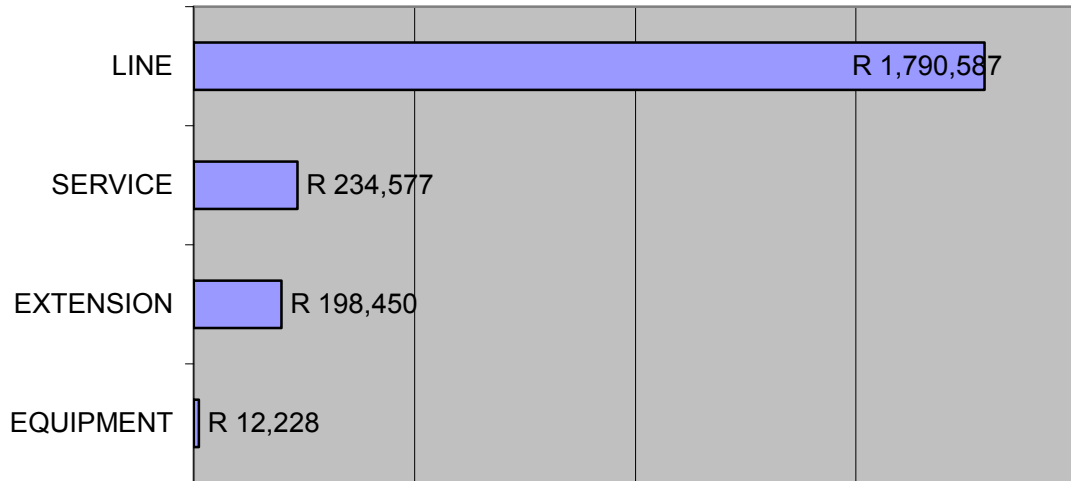
3.1. Infrastructure Expenditure Breakdown



Note: See next sections for description what these categories consist of.



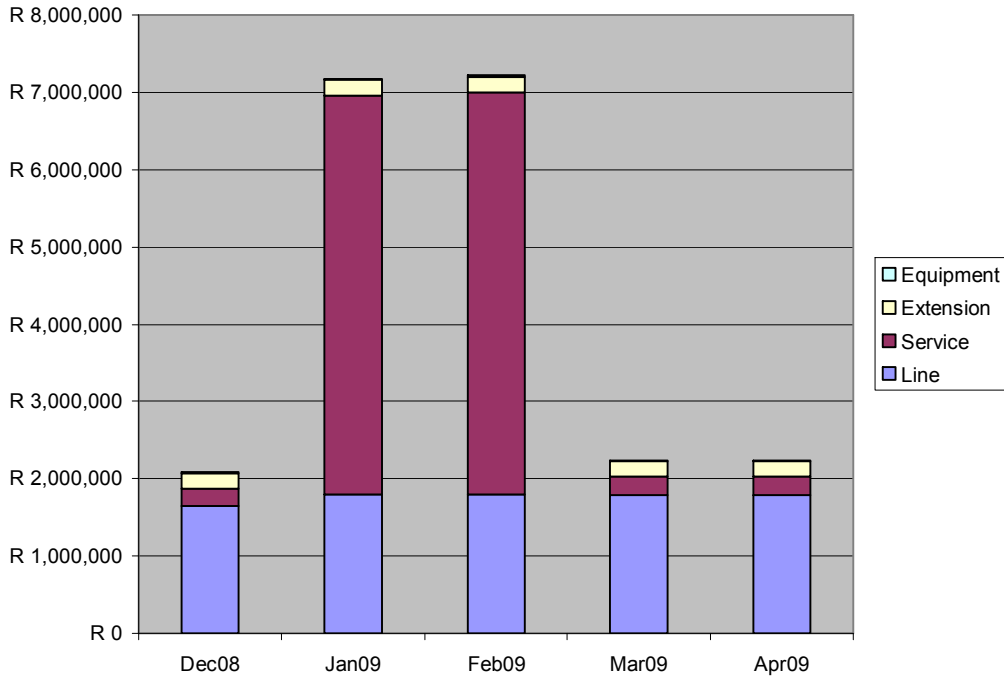
Rental



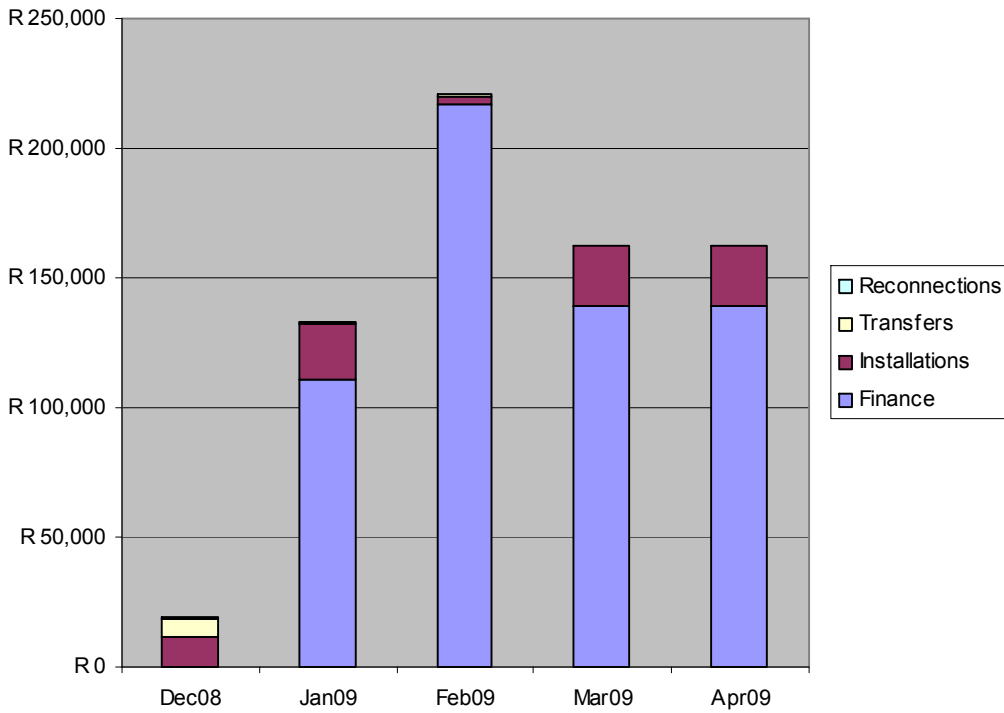
3.2. Key indicators

	Dec	Jan	Feb	Mar	Apr
TOTAL FIXED COST					
Rental	R 2,086,541	R 7,175,256	R 7,219,371	R 2,235,841	R 2,235,841
Surcharges	R 18,987	R 132,956	R 220,597	R 162,160	R 162,160
Volumes					
Nr of branches	766	766	798	798	798
RENTAL					
<i>Avg line rental per branch</i>	R 2,148	R 2,345	R 2,249	R 2,244	R 2,244
<i>Avg equipment rental per branch</i>	R 19	R 19	R 24	R 15	R 15
<i>Avg service fees per branch</i>	R 298	R 6,743	R 6,524	R 294	R 294
<i>Avg outdoor exts per branch</i>	R 259	R 260	R 249	R 249	R 249
SURCHARGES					
<i>Avg finance charges per branch</i>	R 0.00	R 144.14	R 272.27	R 174.61	R 174.61
<i>Avg transfers per branch</i>	R 9.65	R 0.53	R 0.64	R 0.00	R 0.00
<i>Avg reconnections per branch</i>	R 0.56	R 0.56	R 0.00	R 0.00	R 0.00
<i>Avg installations per branch</i>	R 14.58	R 28.90	R 3.53	R 28.60	R 28.60

3.2.1. Trends Rental



3.2.2. Trends Surcharges



3.3. Rental Breakdown

3.3.1. Line Rental:

	COST	NR_ITEMS	AVG/ITEM
ISDN BRA	R 768,417	3,329	R 230.83
ISDN PRI	R 737,035	290	R 2,541.50
Telephone	R 285,135	2,040	R 139.77
TOTAL	R 1,790,587	5,659	R 316.41

3.3.2. Equipment Rental:

	COST	NR_ITEMS	AVG/ITEM
Diana I/D Ext. Operator Term.	R 2,213	12	R 184.41
Calypso 6+12 Control Unit	R 1,113	3	R 371.08
Diana Control Unit	R 825	2	R 412.25
DPS Control Unit	R 791	3	R 263.71
Jupiter Control Unit	R 723	3	R 240.86
Exchange Line Port	R 718	6	R 119.64
Diana Exchange Line Port	R 640	2	R 319.83
Opticon24 C/U incl 10 min BATT	R 436	2	R 217.97
Diana O/D Ext. Operator Term.	R 344	1	R 343.54
Calypso 3+8 Control Unit	R 307	1	R 306.79
	R 8,108	35	R 231.66
Other	R 4,120	75	R 54.93
TOTAL	R 12,228	110	R 111.16

3.3.3. Services:

	COST	NR_ITEMS	AVG/ITEM
DSL Faster Bundle	R 79,497	278	R 285.96
SmartAccess-Basic Package	R 42,031	288	R 145.94
DSL Faster	R 36,867	130	R 283.60
Golden Number	R 21,046	165	R 127.55
IdentiCall	R 12,385	462	R 26.81
Call Management Report	R 10,341	15	R 689.37
DSL Fastest	R 5,796	16	R 362.28
Golden number reservation	R 4,305	38	R 113.28
Direct-a-call	R 3,309	59	R 56.09
DSL Fastest Bundle	R 2,898	8	R 362.28
	R 218,475	1,459	R 149.74
Other	R 16,101	448	R 35.94
TOTAL	R 234,577	1,907	R 123.01

3.3.4. Extensions:

	COST	NR_ITEMS	AVG/ITEM
PABX O/D Extension	R 38,609	117	R 329.99
PABX Dereg O/D Extension	R 36,983	94	R 393.44
Outdoor Extension	R 9,240	28	R 329.99
POTS O/D Extension	R 6,600	20	R 329.99
Indoor extension	R 565	14	R 40.37
Jupiter/dps indoor extensions	R 169	3	R 56.20
DPS Indoor Extension	R 74	1	R 74.34
Calypso Indoor Extension	R 43	1	R 42.98
	<hr/>		
	R 92,283	278	R 331.95
Other	R 0	0	
TOTAL	R 92,283	278	R 331.95

3.4. Surcharge Breakdown

	COST	NR_ITEMS	AVG/ITEM
INSTALLATION	R 22,820	59	R 386.78
TRANSFER	R 0	0	R 0.00
RECONNECT	R 0	0	R 0.00
FINANCE	R 139,340	3,017	R 46.19
TOTAL	R 162,161	3,076	R 52.72

4. Traffic Analysis

4.1. Traffic Statistics

NOTE: Erlang is a measure of traffic density in the busiest hour of the period. It is measured in hours. E.g. 100 Erlang means that 100 hours of call duration was measured in the busiest hour. It is used by queue theory to design a certain Quality of Service (QoS). I.e. how many channels do I require to cope with a certain Erlang value and a statistical blocking rate of say 1 call in 100 (QoS) in the busiest hour. For example according to Queue theory you will need 128 channels to ensure a QoS of 1 in 100 probability that a call will be blocked in the busiest hour if your Erlang rating is 100.

4.1.1. Top Erlangs per location

BRANCH	NR CH	ERLANG	Erl / CH	DURATION
Johannesburg cent2	765	3,049.6	3.99	1,076,905.1
Contact Centre	18	454.9	25.27	3,249,734.5
Johannesburg cent1	2,310	200.4	0.09	2,078,431.5
Sandton cent1	939	158.7	0.17	1,102,636.3
Soweto branch	156	95.8	0.61	41,938.9
Durban cent3	668	87.5	0.13	721,764.5
Sandton cent2	359	76.2	0.21	545,352.4
Johannesburg branch 3	329	64.7	0.20	472,083.6
Durban branch 3	578	56.7	0.10	367,597.8
Durban branch 9	538	56.5	0.11	473,131.6

4.1.2. Locations: Maximum traffic per channel

BRANCH	NR CH	ERLANG	Erl / CH
Contact Centre	18	454.9	25.27
Uitenhage branch	2	11.1	5.55
Bruma branch	6	27.2	4.53
Johannesburg cent1	765	3,049.6	3.99
Sandton branch 5	2	5.8	2.89
Uitenhage branch	18	37.7	2.09
Bloemfontein branch 3	17	27.8	1.63
Welkom branch 2	23	36.8	1.60
Muizenberg branch	2	2.7	1.37
Johannesburg branch 11	16	21.4	1.34

4.1.3. Locations: Minimum traffic per channel

BRANCH	NR CH	ERLANG	Erl / CH
Roodepoort branch	2	0.031	0.015
Vanderbijlpark branch 4	2	0.029	0.014
Pinetown branch 2	4	0.056	0.014
Milnerton branch	9	0.109	0.012
Bonteheuwel branch	7	0.077	0.011
Ladysmith branch	1	0.008	0.008
Bellville branch	6	0.040	0.007
Paarl branch 5	7	0.024	0.004
Durban branch 7	70	0.087	0.001
Bedfordview branch	2	0.002	0.001

Minimum traffic per channel could indicate underutilized channels.

4.2. Outgoing channels required

Channels required is based on a QoS blocking rate of 1 in 1000 calls. Note that these calculations are based on the following:

- No incoming calls are taken into account (no data)
- It is assumed that all the channels on a site can be selected by the PBX when trunks are busy. I.e. it is assumed all channels are routed via the PBX (none bypassing the PBX) and routing tables are set appropriately.

4.2.1. Top Locations OUTGOING Channels Required

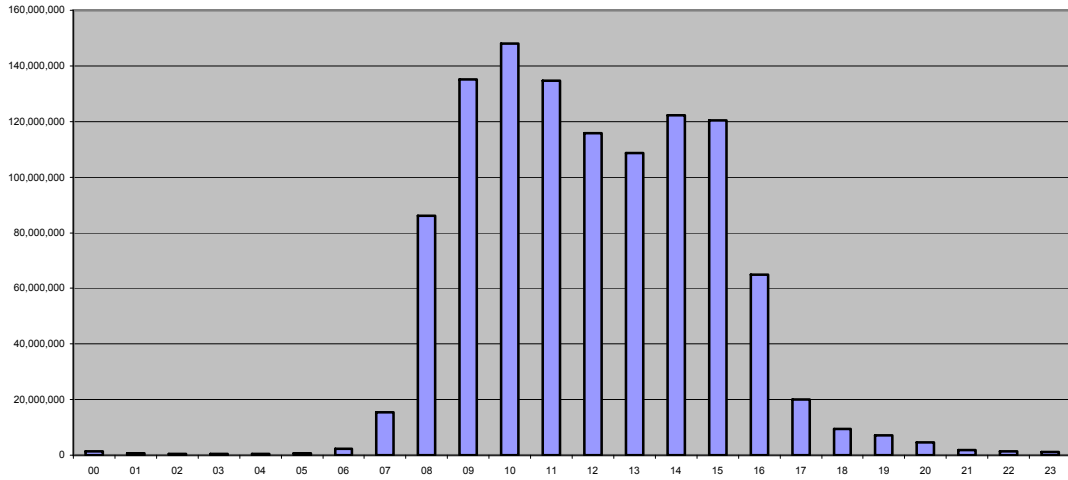
BRANCH	CHANNELS	ERLANG	Erl/Ch	CH required
Johannesburg cent1	765	3,049.6	3.986	501
Johannesburg cent2	2,310	200.4	0.087	250
Sandton cent2	939	158.7	0.169	203
Soweto branch	156	95.8	0.614	132
Durban cent1	668	87.5	0.131	122
Sandton cent1	359	76.2	0.212	109
Johannesburg cent1	329	64.7	0.197	95
Durban cent3	578	56.7	0.098	85
Durban branch1	538	56.5	0.105	85
Cape Town branch 5	250	50.5	0.202	78

NOTES:

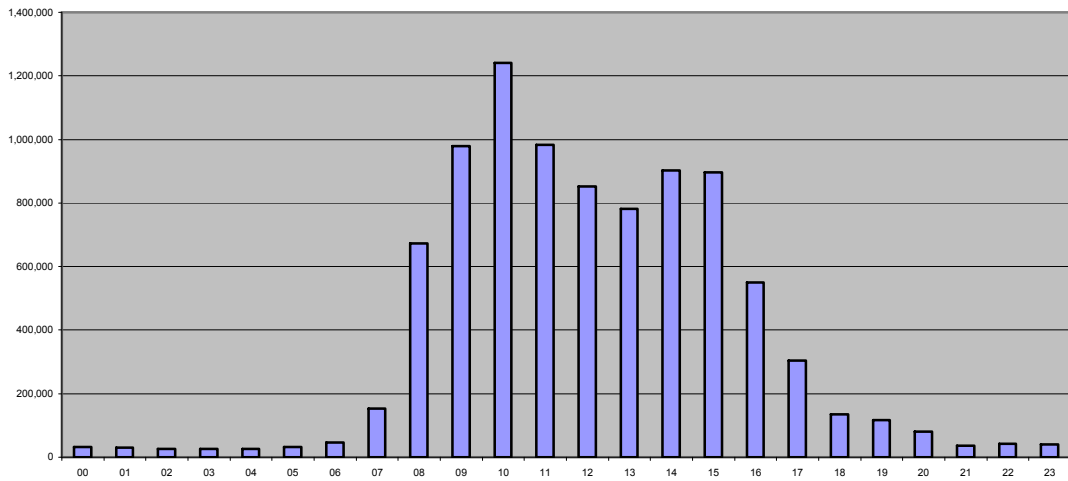
- Incoming traffic not taken into consideration.
- If incoming channels are separate from outgoing channels they can be added to nr channels required. If the incoming and outgoing channels are shared on trunks, then the Erlang calculations need to be re-done taking incoming calls into account.

4.2.2. Traffic Day Profile

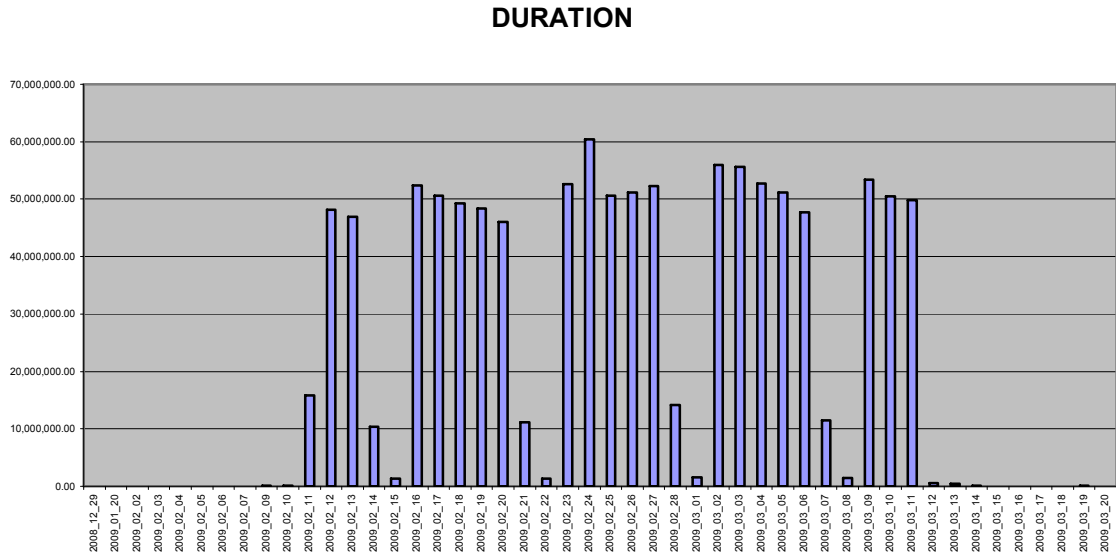
DURATION



NR_CALLS



4.2.3. Traffic Date Profile



CDR data with dates larger than 12 March are present due to some invoices in D and F billing cycles, which end after the 12th of March. There are 49 detail invoices in billing cycle D (903D) and two in billing cycle (903F). Billing cycle F cuts off at 20th of March. See the table below.

CDRs prior to 4th of February mainly come from invoice 903C0009xxxxx. These were all ShareCall nrs.

The calls dating back to December were two calls to: 0414zzzzzzz from invoice 903C001vvvvvv.

CONFIDENTIAL

CALLDATE	DURATION	NR_CALLS
2008_12_29	88.0	2
2009_01_20	62.0	2
2009_02_02	1,123.0	45
2009_02_03	200.0	7
2009_02_04	11,158.0	82
2009_02_05	54,192.0	582
2009_02_06	28,073.0	189
2009_02_07	43.0	2
2009_02_09	124,694.0	199
2009_02_10	71,967.0	528
2009_02_11	15,805,914.0	131,109
2009_02_12	48,199,866.0	399,656
2009_02_13	46,910,641.0	390,916
2009_02_14	10,355,693.0	99,323
2009_02_15	1,380,802.0	22,286
2009_02_16	52,375,230.0	407,541
2009_02_17	50,659,882.0	401,096
2009_02_18	49,289,116.0	390,915
2009_02_19	48,425,868.0	390,459
2009_02_20	46,072,835.0	376,522
2009_02_21	11,155,397.0	116,501
2009_02_22	1,378,635.0	40,733
2009_02_23	52,564,676.0	415,494
2009_02_24	60,402,216.0	642,753
2009_02_25	50,606,895.0	391,819
2009_02_26	51,159,397.0	394,767
2009_02_27	52,321,549.0	395,039
2009_02_28	14,146,274.0	126,754
2009_03_01	1,573,862.0	29,176
2009_03_02	55,928,964.0	398,205
2009_03_03	55,633,902.0	395,744
2009_03_04	52,752,426.0	383,593
2009_03_05	51,183,595.0	387,517
2009_03_06	47,726,924.0	366,568
2009_03_07	11,535,689.0	112,042
2009_03_08	1,468,782.0	26,443
2009_03_09	53,404,080.0	390,586
2009_03_10	50,533,504.0	395,747
2009_03_11	49,849,057.0	466,290
2009_03_12	503,199.0	1,379
2009_03_13	424,954.0	2,528
2009_03_14	67,158.0	1,217
2009_03_15	3,055.0	62
2009_03_16	2,951.0	30
2009_03_17	35,363.0	28
2009_03_18	46,775.0	77
2009_03_19	119,164.0	38
2009_03_20	2,256.0	28

5. Conclusions and Actions

Investigations to be launched:

Nr	Description	Notes	Ref	Who	When
1	Compile official nr lists	Suppliers, employee cell nrs, customers, etc	<u>2.3</u>		Apr 09
2	Investigate R168,337 difference between invoices and CDR totals – Other Operator	Internal Consumption item to be clarified	<u>1.1</u>		Apr 09
3	Align remaining invoices to the C billing cycle	Calls appear after 11 March	<u>4.2.3</u>		Apr 09
4	Investigate High duration and long calls		<u>2.11</u>		Apr 09
5	Find out from Telkom if Neotel have certain dial prefixes allocated at the moment	Assist with re-costing of calls Destinations: 021 801, 813, 815, 818, 822, 824, 836, 837 011 021, 024, 039, 040, 053, 074, 585 053 820	<u>2.1</u>		Apr 09
6	Determine why re-costing of international calls is low		<u>1.2</u>		Apr 09

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