Case

WANOPT
The Wide Area Network Optimizers

BRAZILIAN FINANCIAL COMPANY OPTMIZES ITS CALL-CENTER TRANSPORT STRUCTURE

This document describes a project executed by WANOPT analyzing the telecommunications infrastructure of the Brazilian arm of a worldwide-diversified financial services company.

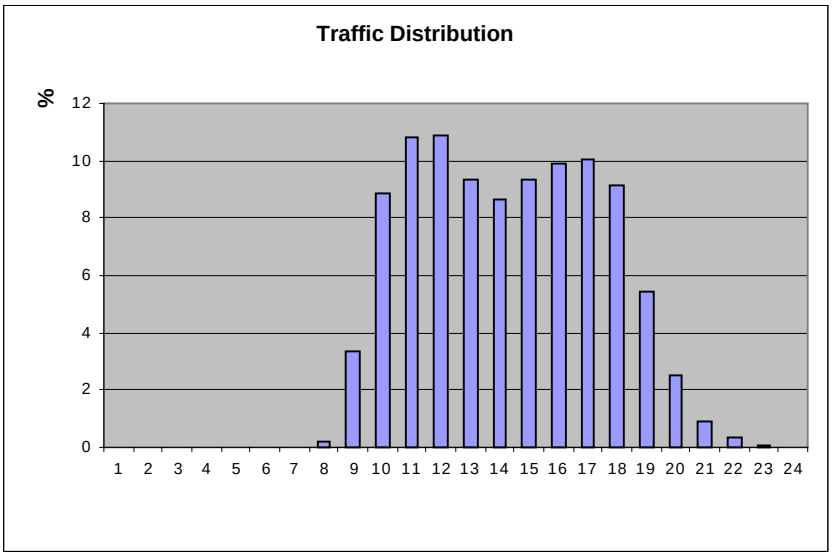
- The total of spoken minutes per month was 4,519,676
- The number of calls was 1,396,327
- The average call duration was 3.23 minutes.
- All calls were handled by a call-center located in Rio de Janeiro and originated from all parts of Brazil.
- It had a contract with one of Brazil's main ILECs (Telemar) paying a flat rate.

The company was studying alternatives to reduce its current telecommunication costs of approximately **US$ 828,000** per month.

Our study identified potential savings that had an average of approximately **US$ 270.162.00** per month bringing the cost down by **32%**. The redesigned structure would cost **US$ 558,000** per month.

The alternative service providers available were EMBRATEL, TELEMAR, TELEFONICA and INTELIG (all of them providing either dedicated or switched connections). In Brazil the calls within the same area code are charged and the 0800 calls can be charged differently depending on where they originated.

The call distribution is shown below. As can be seen, the ABH (Average busy hour) is 11:00 a.m. to 12:00 noon and is 11% of the traffic.



The study embories two different aspects: One involving negotiation of contracts and discount structures and the other involving re-design of the network structure including consideration of a private network.

WANOPT
Condominio Centro Empresarial Raja Gabaglia - Raja Gabaglia Avenue 1011 Suite 504B
Belo Horizonte - Minas Gerais - Zipcode 30380-090 - Brazil
Phone:+55 31 3296 3474 - Fax:+55 31 3292 0490
E-mail: wanopt@wanopt.com
www.wanopt.com

Negotiations

This aspect consisted of comparing the company's current costs with the market alternatives available. We compared the telephone bill (0800) verifying how much it would cost if it was charged using eight different charging plans from four service providers. TELEMAR (basic plan and

31 empresarial plan), TELEFONICA DE SPANA (basic plan), INTELIG (two specific proposals) and EMBRATEL (basic plan and one specific proposal).

These simulations showed the correlation between the amount currently paid and the savings achievable through negotiation.

Charging plan	Value	Difference	%	Average price per minute
Telefonica de Spana Basic Plan	USD 2,234,624.00	USD 1,406,252.04	169.76%	USD 0.49
EMBRATEL basic plan	USD 2,078,482.77	USD 1,250,110.81	150.91%	USD 0.46
Telemar Basic plan	USD 2,054,728.00	USD 1,226,356.04	148.04%	USD 0.45
Telemar 31 Empresarial (RJ) plan	USD 1,064,075.22	USD 235,703.26	28.45%	USD 0.24
Telemar specific plan currently used	**USD 828,371.96**	USD 0.00	0.00%	USD 0.18
EMBRATEL specific proposal	USD 673,642.35	(USD 154,729.61)	-18.68%	USD 0.15
Intelig (1) specific proposal	USD 752,195.65	(USD 76,176.31)	-9.20%	USD 0.17
Intelig (2) specific proposal	USD 687,619.40	(USD 140,752.56)	-16.99%	USD 0.15

As can be seen in the spreadsheet above, there was some room to obtain savings by negotiating with the service providers. We estimated that there was the possibility of achieving at least a 15% discount off the current costs.

Re-designing the structure

Although there was room to obtain discounts, we also analyzed the possibility of savings redesigning the network. With this objective we analyzed the telephone bill identifying the origination and destination of traffic (Traffic matrix), analyzing several network alternatives including the alternative of building a private network.

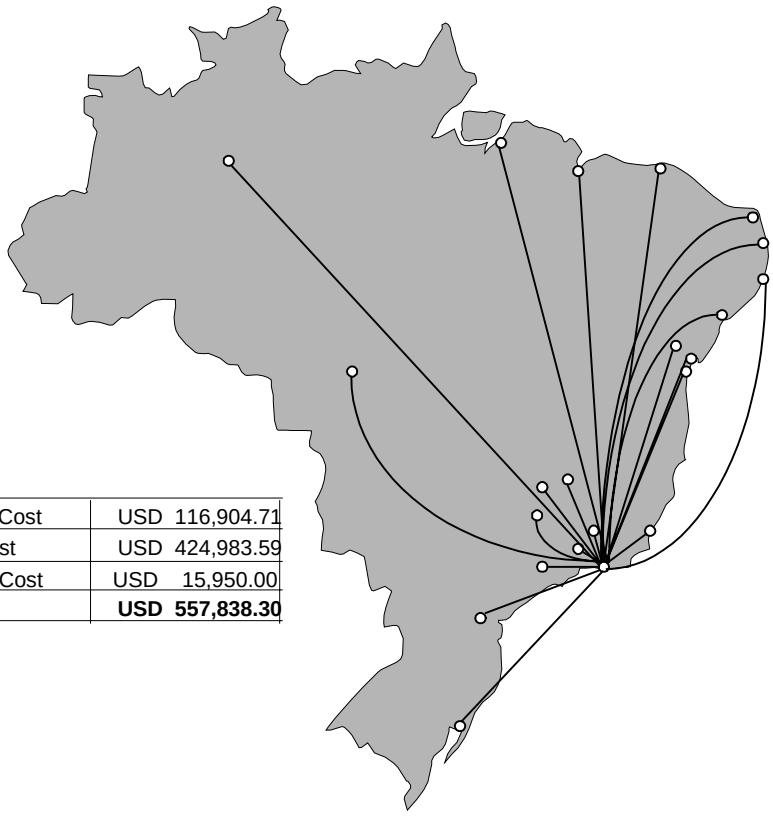
The optimized structure identified included 22 regional nodes (as shown below) connected to Rio de Janeiro through dedicated circuits. We adopted local numbers in each one of these 22 nodes. The 0800 number would work only outside these 22 areas. This structure cost US$ 557,838 per month generating a saving of 32% (US$ 270.162.00) off the current expenditure.

We also took into consideration the cost of building these nodes (considering the total cost of ownership), including the hardware lease cost and the real estate rental costs. In general we were very conservative when defining the costs. The 22 nodes were as shown below:

	Node Name	Area code	Total number of users associated to the node	Number of users local	Number of users between 50 and 100Km	Number of users between 101 and 300Km	Number of users between 301 and 700Km	Number of users above 700Km
1	BELO HORIZONTE	312	109,203.00	47,843.00		15,821.00	32,126.00	
2	JUIZ DE FORA	322	38,946.00	17,501.00		10,783.00	10,662.00	
3	UBERLANDIA	342	59,831.00	15,509.00		9,408.00	29,371.00	
4	MACEIO	822	52,363.00	20,072.00		2,699.00	29,266.00	
5	MANAUS	922	28,854.00	21,888.00		182.00	312.00	
6	FEIRA DE SANTANA	752	51,236.00	26,508.00	3,708.00	2,822.00	4,363.00	
7	ITABUNA	732	33,819.00	18,516.00		646.00	9,574.00	
8	SALVADOR	712	35,485.00	34,379.00		1,106.00		
9	FORTALEZA	852	86,730.00	66,795.00		1,174.00	7,682.00	
10	BRASILIA	612	108,283.00	69,901.00	18,785.00	2,849.00	2,666.00	
11	VITORIA	272	78,184.00	38,052.00		3,990.00	33,158.00	
12	GOIANIA	622	82,807.00	62,717.00		5,889.00	12,435.00	
13	SAO LUIS	982	30,017.00	14,532.00		2,339.00	4,147.00	
14	CUIABA	653	46,450.00	23,131.00		92.00	3,032.00	
15	BELEM	912	22,597.00	18,396.00	288.00	334.00	146.00	0.00
16	JOAO PESSOA	832	36,580.00	24,787.00		4,658.00	7,063.00	0.00
17	RECIFE	812	102,397.00	90,704.00	3,236.00		8,457.00	
18	CURITIBA	412	96,423.00	38,524.00		7,783.00	23,711.00	0.00
19	RIO DE JANEIRO	21	113,873.00	85,752.00	7,465.00	1,172.00	19,484.00	138,635.00
20	NATAL	842	26,537.00	25,189.00			1,348.00	
21	PORTO ALEGRE	512	52,124.00	27,666.00	225.00	3,571.00	15,714.00	0.00
22	SAO PAULO	11	106,302.00	60,125.00		23,184.00	22,993.00	
TOTAL			1,399,041.00	848,487.00	33,707.00	100,502.00	277,710.00	138,635.00
Percentage			100.00%	60.65%	2.41%	7.18%	19.85%	9.91%

The topology implemented was a star configuration although some marginal gains could be obtained through composing flows over the same physical paths (e.g. traffic from Porto Alegre and Curitiba coming to Rio de Janeiro through São Paulo).

We also did simulations identifying how much the structure would cost if we distributed IVRs and if the local callers paid for the calls.



Backbone Cost	USD 116,904.71
Access Cost	USD 424,983.59
Hardware Cost	USD 15,950.00
Total:	**USD 557,838.30**

As can be seen, this kind of analysis not only generated substantial economies but also made possible the evaluation of several operational scenarios.