

Organisational Assessment of Local Distribution Companies

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1. Background

There are 27 Local Distribution Companies (LDC) in Brazil. Most of them are increasing their investments, pipeline networks and number of customers. As a result, they hire more employees and services and their organisational structure complexity also grows. On the other hand, they are facing pressure for cost reduction from regulators, shareholders and competitors (eg.: fuel oil, Liquid Petroleum Gas - LPG). For these reasons, LDCs need to have strong references to guide them how to grow efficiently. In particular, it is important to have guidelines to help them to determine the necessary changes in their workforce size and in their organisational structure. In addition, LDCs have to decide whether they will become bigger companies by contracting service providers or performing activities in-house. This particular subject is still vaguely explored in the literature, in spite of the large number of LDCs dealing with it.

2. Aims

Create a methodology and establish some benchmarks to help Brazilian LDC decision makers to answer four questions related to management of these companies:

- (a) What should be the right size for the workforce of a given LDC?
- (b) What should be the right size of its departments?
- (c) Which organisational structure should be adopted?
- (d) Which activities of LDCs should be outsourced or performed in-house?

3. Methods

The study was divided into three steps: (1) Field Research, (2) Analysis, (3) Recommendation.

3.1. Field Research

Although LDCs provide basically the same product, that is, natural gas, some characteristics such as geographical location, pipeline size, number of customers and state laws can affect the size of the required workforce, organisational structure and outsourcing model. For these reasons it was necessary to visit 11 LDCs located in different regions of Brazil and at different stages of development.

In order to carry out field research in the eleven companies, a questionnaire was created to be used in individual interviews with leaders from all company departments. The interviews were semi-structured, allowing new questions during the interviews depending on the interviewee answers. The main information gathered in the interviews was: (i) a description of activities and products of each area of responsibility, (ii) a detailed list of the workforce in each department according to their category - in-house or outsourced - and their distribution in company premises; (iii) identification of activities performed by the in-house team and by outsourced personnel; (iv) managers' assessment of the right workforce size for their areas, including criteria and justifications; (v) managers' assessment regarding which activities are best performed by in-house teams or outsourced personnel, including criteria and justifications; (vi) identification of indicators to monitor the areas' activities and products. In addition, we requested each company to provide its business plan, internal norms and a list of service providers.

Each interview lasted between 1 and 2 hours with an average of approximately 1 1/2 hour. A total of 213 face-to-face interviews were performed with directors, managers and coordinators of all areas of the companies. Over 300 hours of interviews were conducted. In addition, it was mapped through the interviews 140 activities pertaining to various company

processes such as corporate governance, planning, legal affairs, marketing, sales, engineering (design and construction), operation and maintenance, customer service, finance, accounting, billing, procurement, supply, Human Resources (HR), Information Technology (IT), internal administrative services and those related to Health, Safety and the Environment (HSE).

3.2. Analysis

The data collected in field research were analyzed in relation to three perspectives: outsourcing, workforce size and organisational structure.

▪ **Outsourcing**

This analysis was based on the identification of factors that favor or hinder the outsourcing of each of the 140 mapped activities. Each company's experiences were considered, as well as the suggestions provided by managers in interviews.

The main factors in favor of outsourcing considered in this study are: (i) non-core natural gas distribution business activities; (ii) low added value activities; (iii) activities with variable demand; (iv) activities that require a high degree of specialization; (v) activities for which it is possible to find qualified suppliers; (vi) activities with potential conflicts of interest if performed by in-house teams; (vii) financial risks are reduced if specific activities are performed by suppliers; (viii) activities that must be performed by a third-party due to a legal obligation.

The main factors considered in this study that are unfavorable to outsourcing: (i) natural gas distribution business core activities; (ii) activities that are critical for the company image; (iii) activities that deal with strategic information; (iv) small-scale or short duration activities (not attractive for suppliers); (v) activities for which it is difficult to find qualified suppliers; (vi) activities with potential conflicts of interest if performed by outsourced personnel; (vii) activities with high potential legal or regulatory risks if performed by outsourced personnel. Each of the 140 mapped activities was analyzed by the project team, regarding the factors above. Then the team reached a consensus decision, recommending an outsourcing model.

▪ **Workforce size**

Basically, a department workforce size depends on two factors: activity scope and workload. As a rule, the larger the department activity scope or workload, the bigger the workforce size needed. In order to determine activity scope, a scale from 1 to 5 was established, with "1" representing an area with restricted scope and "5" an area with a broad one. In order to measure workload, the study identified the indicators that are significantly linked to workforce size: (i) number of customers; (ii) pipeline length (km); (iii) investments (R\$); (iv) revenues (R\$); (v) population of the cities covered by the pipeline network; (vi) number of company premises. Considering these two factors, a reference table was proposed with five workforce size levels corresponding to a range of right workforce sizes for each individual department.

Workforce Size Range by Level

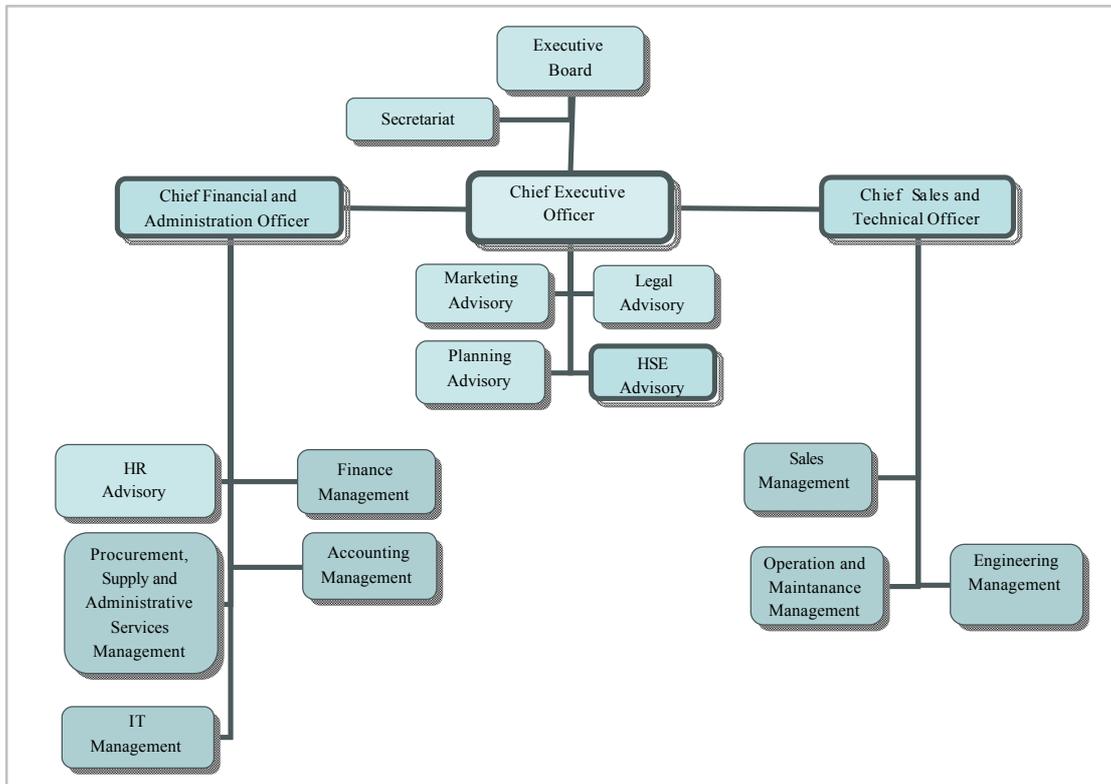
Department	1			2			3			4			5		
	Min	Max	Leader												
Executive Board	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Board Advisory	0	0	0	0	1	0	1	3	0	1	3	0	1	3	0
Secretariat	2	2	0	2	3	0	2	3	0	2	4	0	3	5	0
Legal Affairs	2	2	0	2	3	1	3	5	1	4	6	1	5	7	1
Marketing	2	3	0	3	4	1	5	7	1	7	9	1	8	10	1
Planning	2	2	0	2	3	1	3	4	1	4	5	1	6	8	1
Health, Safety and the Environment (HSE)	2	3	0	3	5	1	5	6	1	7	9	1	10	12	1
Sales	3	5	1	6	9	3	10	14	2	15	20	2	21	27	6
Customer service	2	4	0	4	6	1	6	10	1	11	17	1	18	38	3
Engineering	5	6	1	6	8	1	7	13	3	12	15	3	15	22	3
Operation and Maintenance	8	15	1	16	32	3	33	48	3	48	70	4	71	112	5
Finance and Accounting	5	7	2	6	8	2	7	11	2	11	15	2	14	21	2
Human Resources (HR), Procurement, Supply and internal administrative services	10	15	1	16	23	2	24	32	2	33	49	4	50	60	7
Information Technology (IT)	4	5	1	5	7	1	9	12	1	13	17	3	15	22	3
Total of Level	50	72	10	74	115	20	118	171	21	171	242	26	240	350	36

Caption: Min – Minimum workforce size (including leadership positions), Max - Maximum workforce size (including leadership positions); Leader - maximum leadership positions (managers and coordinators). Workforce considered: in-house and outsourced.

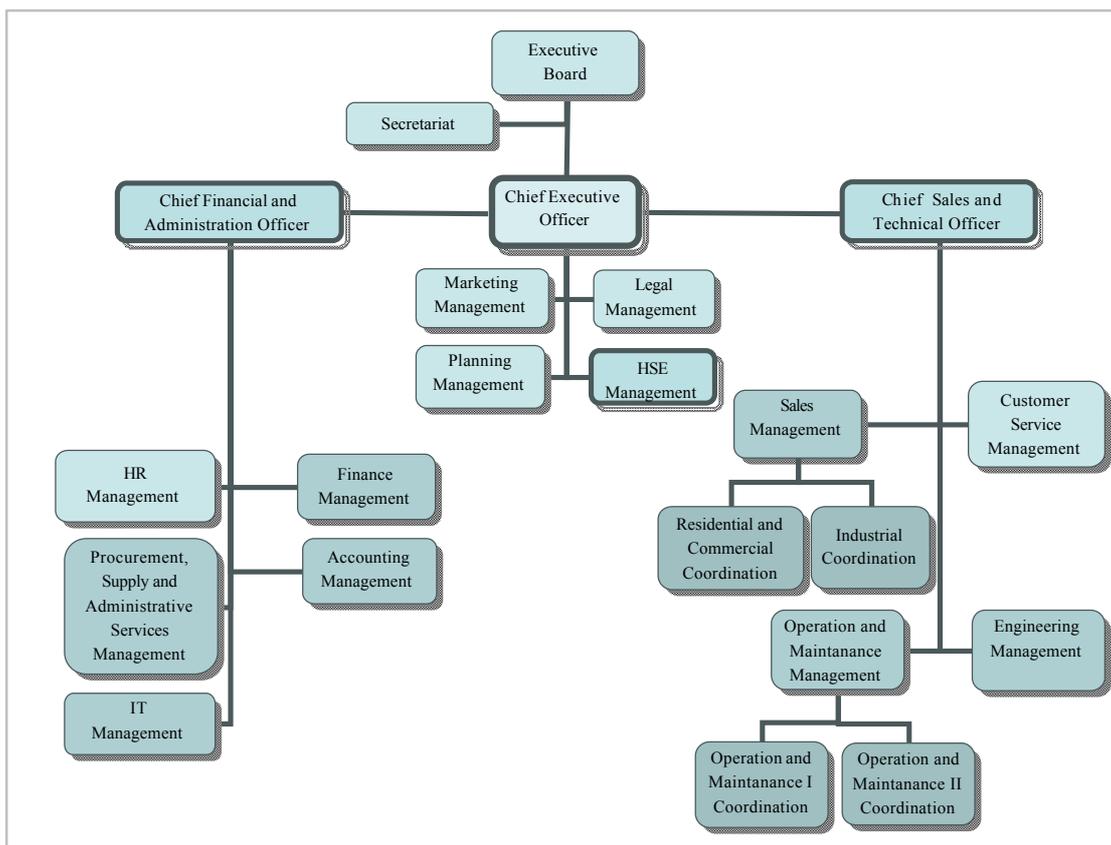
▪ Organisational structure

The organisational structures of the eleven companies were analyzed considering the following factors: (i) strategic plan; (ii) department workforce size (the bigger the workforce size of a department, the greater the demand for control and supervision); (iii) activity affinity (activities of a same process or function); (iv) activity complexity (activities of greater complexity demand more control and impact the number of leadership positions). The reference used in this study was at least one leader for every three employees (departments with more complex activities) and a maximum of one leader for every 25 employees (departments with less complex activities). Based on these factors, five reference charts were drawn up:

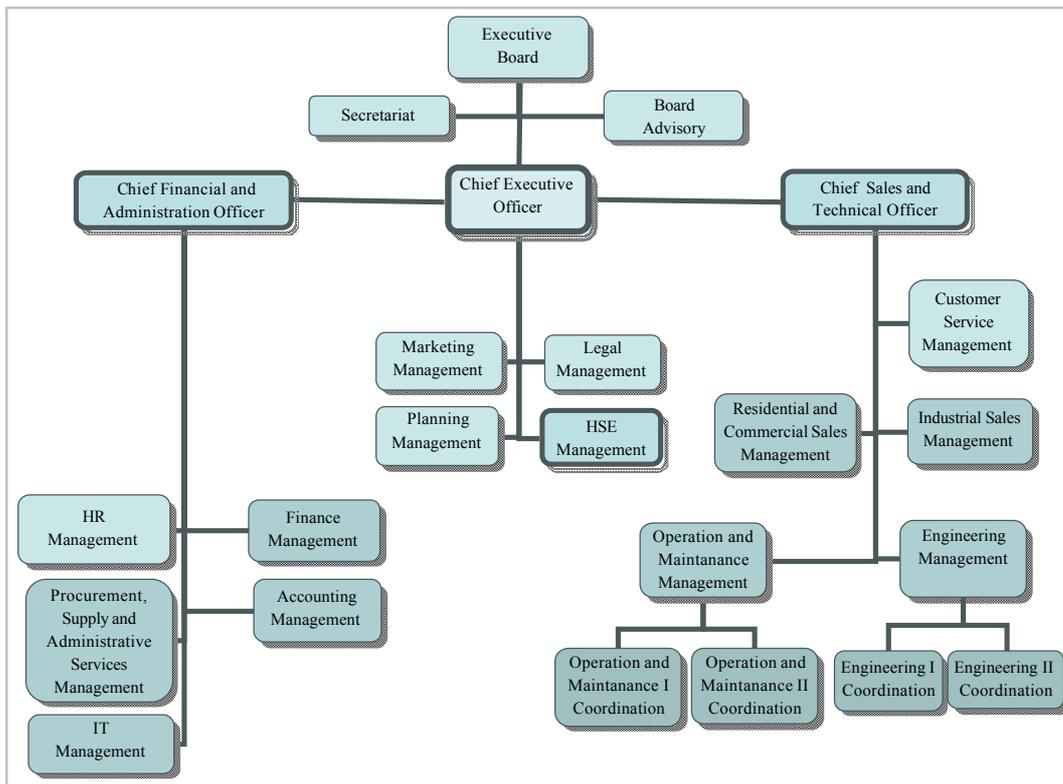
Reference Organizational Structure - Level 1



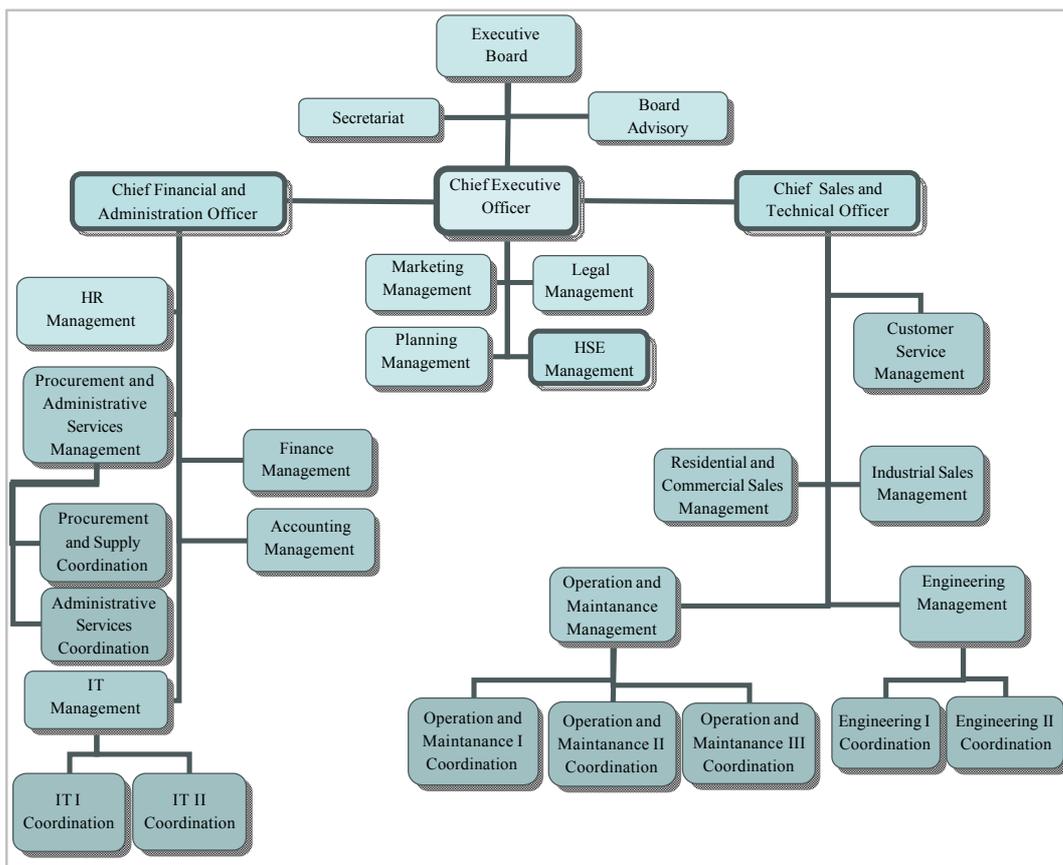
Reference Organizational Structure - Level 2



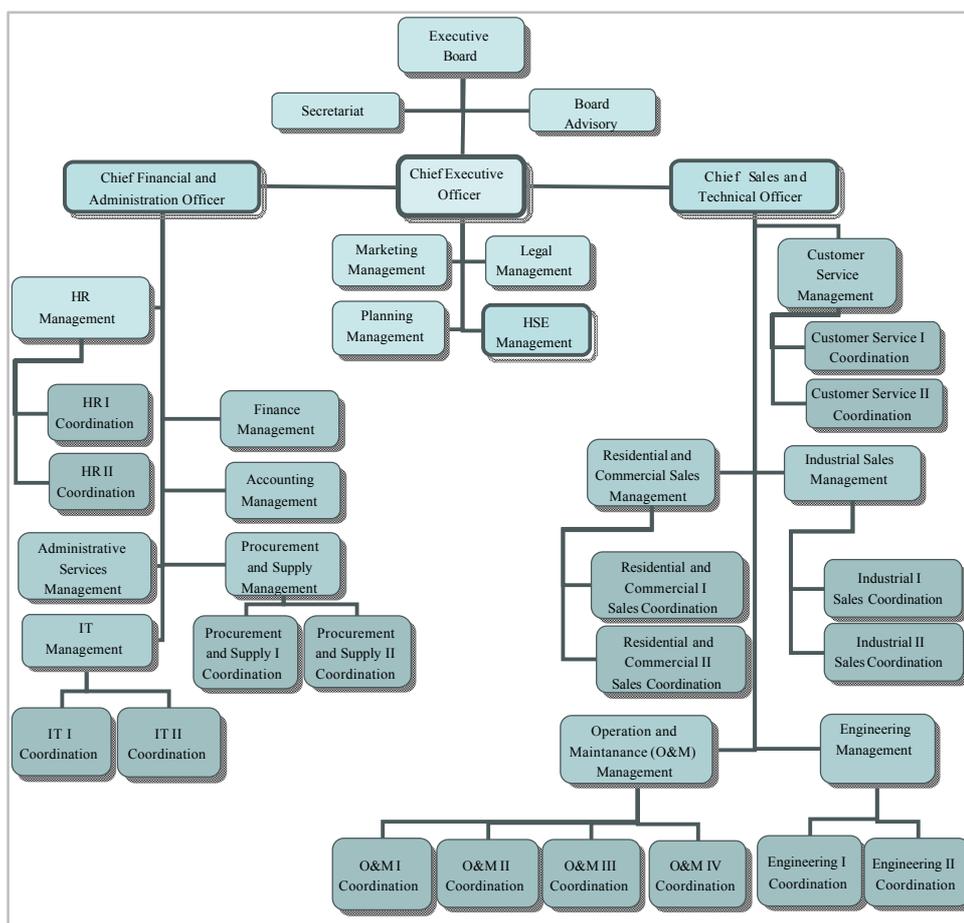
Reference Organizational Structure - Level 3



Reference Organizational Structure - Level 4



Reference Organizational Structure - Level 5



3.3. Recommendation

At last, three reference models were recommended based on the analysis: (i) outsourcing model; (ii) workforce size model; (iii) organisational structure model. Then, it was performed an assessment of the eleven LDCs comparing the information obtained in the individual visits (as is) with the three reference models (to be).

4. Results

The major results of this study are:

- Outsourcing model: it was established the LDC activities which should be outsourced or performed in-house. According to this model, a total of 87 activities should be performed by the in-house workforce, 29 by outsourced personnel and 24 activities could be performed by both;
- Workforce size model: it was created a reference table with five workforce size levels corresponding to a range of appropriate workforce sizes for each individual department;
- Organisational Structure Model: it was proposed five reference organisational structures. Depending on the workforce size level, a LDC can correspond to one of the five references. Based on these three models, it was assessed eleven Brazilian LDCs. The gaps found were identified and actions were addressed to the eleven companies separately in individual reports. In addition, a manual describing the methodology and providing guidelines for self-assessment was drawn up and delivered to the eleven companies. As internal and external environments change over time, it is essential for companies to learn and apply the methodology whenever necessary.

5. Summary/Conclusions

This study led to the creation of a methodology and established some benchmarks for assessing eleven Brazilian LDCs regarding three management issues: workforce size, outsourcing and organisational structure. Board members of these eleven companies now have the necessary tools to make decisions in these issues. They have a consistent frame of reference to decide whether a company should hire 1, 10 or 100 employees or outsource a specific activity and to determine the kind of organisational structure large or small distributors should have. Similarly, the distributors have a tool to assess themselves and to identify and address the main problems related to these issues faster. As the business environment changes over time, it is essential to upgrade these references periodically.