

## INCREASING OPERATIONAL RESULTS AND PROFITS GEARED BY A SUITABLE PRIORIZATION OF CAPITAL EXPENDITURE, MONITORED BY MANAGEMENT DISTRIBUTION SYSTEM

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### SUMMARY

*This paper will show one management methodology over how to increase operational results and profits, by a suitable priorization of the capital expenditure on the assets.*

*Based in the Management Distribution System, we can improve the results, using the Quality Required Level by the clients..*

*This solution warrant the adequated capital alocation, throught the mix of the Protection, Maintenance and Overvoltage Insulation techonologies.*

### WHAT is ELEKTRO

ELEKTRO is one of the largest dealers of Electric Energy in Brazil, that has its defined area of services for 120.000 km<sup>2</sup> between States of São Paulo and Mato Grosso of the South.

It assists the approximately 1,520,000 customers in 222 municipal districts, served by an electric net of 80,000 km of extension, 90,000 transformers, 110 substations and 2,800 employees.

Its electric net is mainly aerial, the primary system possesses voltages of 138, 88 and 69 kV, the system of medium voltage operates in 13,8 kV and the secondary system, three-phase grounded, is operated in 220 / 127 V.

In terms of sold energy, it distributes 45% of its energy to the industrial segment, 9% for the Commercial, 25% for the Residential, 6% for the Rural and 15% for another segments.

Highlight special it should be given to its geographical dispersion and to the number of assisted municipal districts, largely placed in the strip of 5 to 10.000 customers, with consumption predominantly residential.

Important also is the state social economic situation where Elektro in inserted. São Paulo is the most developed State of the Federation, and, function the high instruction levels and communication means, it is also quite high the demand for the continuity of the supply.

In this inquiry, Elektro is the best company of national distribution. In the years of 1997 and 1998, ELEKTRO was crowned with better Dealer's prizes, in function of its continuity indicators, losses and also of better evolution in its results.

It got also the prizes MARKETING BEST, for its attendance process to the customers, through CALL CENTERS, and TOP OF MARKETING, for the introduction of the methodology STANDARD STEP, returned to the safety and productivity in the execution of tasks in the electric net.

In agreement with the Program of Privatization that began in 1994, ELEKTRO was privatized in July / 98, and it has now as controller the American North Group ENRON, a multinational with interests in several countries of the world, concentrated in the energy market.

Until that date, ELEKTRO was part of a state company, responsible for Generation, Transmission and Distribution of Electric Energy–CESP, that, for effect of its government control, its actions were pointed to the fomentation of Infra Structures Electric, especially to the municipal districts of smaller atractivitie in terms of the capital return.

The whole process that it will be described below, was made with ends of transforming the company, in way to do front to the new Brazilian national scenery, now returned to the competition, that began starting from 1997, with the state deregulation and the introduction of the agents regulators and inspectors, and a series of new returned laws that incentive the private investment.

In the current moment, they live together a scenery strongly unregulated, for the great consumers, and a regulated scenery, for the smallest ones, with defined periods of deregulation and increment of the negotiation power among the agents of the market.

The company continues in its effort of transformations, in way to maintain its current conquests, and to develop in new methodologies, technologies and performance indicators, to stay in the vanguard of the companies national dealers, and best to assist its customers.

## **SITUATION PRÉ 1995**

Given the previous controller's requirements, ELEKTRO (CESP DISTRIBUTION), it acted strongly in programs that made possible the access to the energy to all the customers in its area of services.

They are motivated by such programs the fact that 100% of the urban customers possess electric energy, and 90% of the placed in rural, although it dispersed geographical area.

Thus, there were massive capital contributions, that they enlarged the assets, without the capital return requirement. In fact, it is noticed that 45% of the current assets of the electric net are concentrated in the rural zone, what influences in a lot the distribution of resources for its maintenance and warranty of operational continuity.

It parcels out significant of the resources of Elektro were then returned to the expansion of the system, and, with the expansion, complexity was created, that needed other significant contribution of resources in Attendances of Emergency, Maintenances and Commercial Attendance to customers.

Were then allocated human resources, materials and buildings in whole the municipal districts assisted by Elektro, not supported by a logistic evaluation, that guaranteed its interaction and optimization.

Another records problem it gave in the communication among the field teams. With the support of a system of Micro Wave and a VHF shared at that time by whole units of CESP, the employees treated to assist and to dispatch locally whole the customers' demands, from commercial, even load transfers and accidental outages.

In this condition, we possessed 4.200 employees, great part allocated to remote areas, and growing requests of new recruitings, given the growing demands and demands on the part of the customers.

That time, existed 222 local offices, and 64 Dispatch Centers . The substations, not telecontrol, demanded the presence of operators 24 hs, daily, and, for lack of an appropriate system of information, the customers could not be assisted by telephone, demanding its constant displacement.

The administrative controls were quite weak an occasion, provoking redundancies in stocks and other resources, and optimization difficulties . Here also there were growing demands for more vehicles, equipments, personnel, materials and furniture.

In that condition, the continuity indicators and operational results presented low performance, as it can be observed in the pictures of the page 4, indicating for the need of a Reengineering process .

Though, which ELEKTRO always possessed of differential with relationship to other companies, was its technical body, that, in function of one politicizes thrown of personnel's development, it invested strongly in training programs, skills and technical specialization.

In this aspect, the company always accompanied the technological progresses that came being conquered in the exterior, because it was always allowed its technical trips and participations in events of the developed world.

For this reason, the introduction of new technologies returned to Electric Systems and of Information for the technical purpose, were always introduced in Brazil by Elektro.

Given the demands of its technical picture, in obtaining Know-How specify, not offered overseas, Elektro articulated with the other state companies to found a Center of Excellency, for research and development, together with University of São Paulo, where it obtained a series of successes with the absorption of new technologies returned to the quality of the rendered services.

Otherwise, one of its largest allies was always it of possessing an excellent base of technical information, supported in Georeferenced Systems, that allowed optimization series, as it will be explained to proceed, and that came to guarantee differentiated performance levels

The existent DataBase was begun starting from 1974, through aerial flights and field recording, it cost something around US\$ 80 million, and it has been registering all the physical and electric entities of the distribution net, besides the cartography of the assisted area.

Also together with University of São Paulo, Elektro went pioneer in to introduction of the first Telecontrol System of Electric Brazilian Nets, totally developed with own, given the existent market restrictions in that time.

This, in synthesis, is a overview of the situation in the moment of began the transformations, that started with a new professional administration, that had for incumbency the introduction of the company in a new scenery.

## **The STRATEGY FOR THE CHANGE**

The basic platform of the changes be introduced were, essentially, that the services to be offered should have increment of quality, that were facilitated to the customers accesses to new technologies and communication means, and that went starting from then measure the customers' satisfaction and its wishes.

In addition, ELEKTRO should benefit with its resources optimization, positive operational results and preparation for the privatization, without this brought damages to its customers and professional body, that are considered essential, given the volume of investments in its qualification.

So that such it happened, it would be very important to position ELEKTRO positively in the international scenery, so that it was not absorbed by a controller that only wanted profits with OFF-SITE , but

thought of acquiring a partner for a position situational and of vanguard.

Given these challenges, the team centered its efforts in a series of lunges, beginning for the motivation of the employees' body, and for the necessary articulations of politicize-social order, that avoided wastes in the served communities.

The redefinition of its operational requirements, returned to the customers' satisfaction, indicated that would be necessary, before everything, to centralize the communication means, facilitating the customers' road telephones publics access.

Given the immense ones distance regional Brazilian, it was observed that, in it measured, until that a customer arrived to the local office, they would go unavoidably by 7 telephones publics. Thus, were Regionalized the communications, through CALL CENTER, in 7 units, in an atmosphere where were guaranteed accesses to all the services requested by customers, from new connections to emergency maintenances.

CALL CENTER configuration demanded, before everything, that a new system of commercial attendance was developed, what happened as a result of the partnership between Know How of the commercial Elektro team and a vendor of solutions of information of the market.

Was also necessary the Regionalization of the Dispatch Distribution Centers – COD, reduce-alone of 64 for 7 units, conjugated Call Center, to make possible the attendance of technical order to the customers.

The condition to be offered determined that the customer, when complaining of outages, should be located quickly, graphically, avoiding long waits and new customers' subsequent complaints, besides unifying the technical-commercial attendance, an old managerial dream.

This, actually went the largest challenge to be undertaken, therefore, needed a Georeferenced Graphic atmosphere, with each customer's nominal locations, harnessed to the point in that are served by the electric net.

It competed for the success of this process the very up-to-date existent DataBase. Of ownership of the necessary information, was rushed a challenge to another Brazilian vendor highly specialized in Softwares of Electric Management Nets, for configuration of a Dispatch System and Administration of QualityIndicators, real time.

Allying the professionals' of ELEKTRO experience, to the one of the team vendor of the solution, it was Globally obtained the most modern System existent for this end, that, besides making possible the Regionalization of the Dispatch Centers, it guaranteed a clear definition of attendance priorities.

Thus, this system made possible a reevaluation of the existent resources to the time, because starting from

then, not more it would be necessary command for municipal districts crew, being positioned the crew in geoelectric areas, in function of priorities and volumes of calls.

In fact, the subject of the command brought a new challenge. It would be necessary to centralize the communications with the crew, and, after installation of Telecontrol Systems in Substations, to transfer them to the Dispatch Centers.

Given the difficulties with the public Brazilian telephony, were necessary to establish a links series in the Micro Wave own System, and with the public Telephony companies, with expenditure of appreciable amount of resources.

Starting from these means, all disposition of resources was reevaluated, in the best sense to assist the customers. The 222 existent offices an occasion, they were discontinued, starting to exist in the moment 25 units.

With the use of the methodology of "Theory of the Lines", whole technical resource was reevaluated and repositioned. Were reduced the crew teams, like that for Emergency, Maintenance, Connections and Cuts, the needs of functional supervision and the substations operators, that now are attended to the Dispatch Center.

Also, in function of the different regional characteristics of the service-area, were defined the Levels of Requested Quality–NQR, in a segmented way, that today they are responsible for all qualification of the attendance, of the resources and of the capital expenditure in the several assisted areas.

The process changed also all the needs of administrative support. Here also resources of Information Systems returned to the control were introduced, that they determined smaller contributions of resources, besides humans.

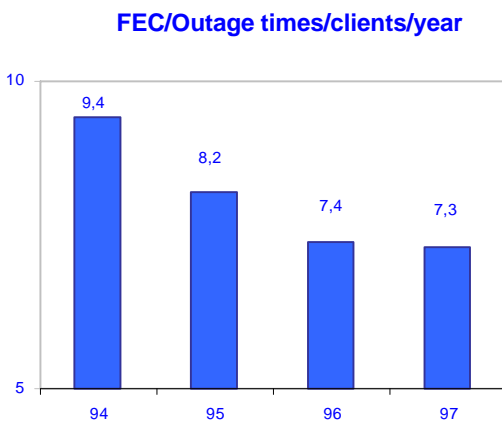
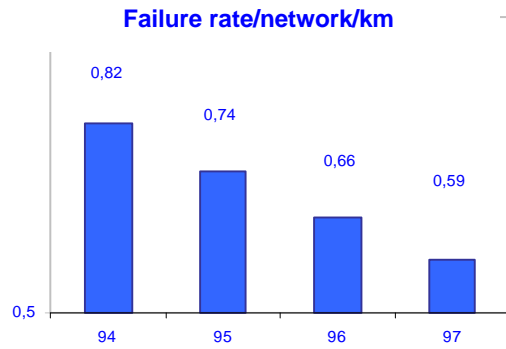
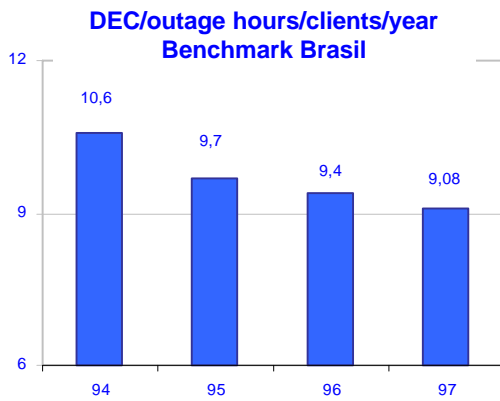
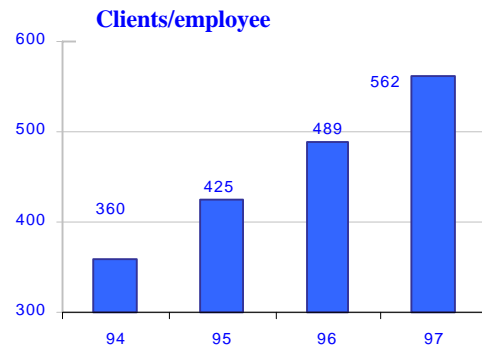
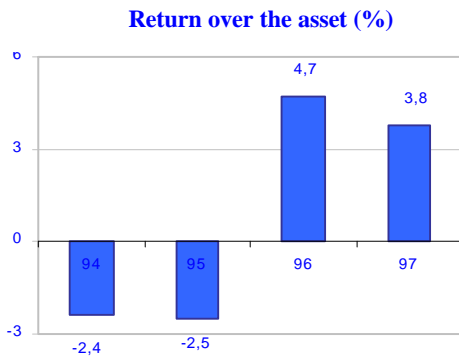
Thus, at the end of this process of Reengineering, the Level of Satisfaction of the Customers jumped of the landing of 78 for 85%, personnel's needs were reduced of 4.200 for 2.800 employees, and the levels of expenses were reduced in US\$ 70 million / year.

It is worth to point out that all the reductions, especially of employees, happened for effect of retirements and incentivated dismissals, without happened upset and internal conflicts, with the community and with the class unions.

When the process ended, in 1997, ELEKTRO started to also present positive operational results, besides becoming highly attractive to the privatization, what demonstrated its acquisition with a 90% premium, unique considering the other national dealers, besides being acquired by the more skilled controller in terms of energy of the world.

## RESULTS

We presented some indicators originating from of the change below:



## ELEKTRO FACE TO THE MARKET

The historical references of ABRADÉE–Brazilian Association of Distribution of Electric Energy, has been showing that the market of ELEKTRO is what more comes growing in the State of São Paulo, also occupying outstanding position in the national scenery in this inquiry.

In fact, in the last five years, ELEKTRO comes growing 4,1% to the year in connected customers' terms, 4,3% in sales and 17,5% in its Gross Operational Revenue.

Respected the economic conjuncture, the market forecasts for next five years point for a medium rate of growth of 3,9% for number of new customers, 4,3% for the annual consumption and 4,4% in the Gross Operational Revenue.

## **THE INVESTMENTS OF CAPITAL FOR SUPPORT TO THE MARKET**

Given the continued growth of the Elektro market, it can be observed the necessary capital expenditure to the development of the market.

The capital needs, however, also respect the Requested Levels of Quality–NQR, for each one of its segments, always with base in the adapted levels of return of the capital.

The own constructive technology of the Electric System considers the quality requested by that market. In the moment, Elektro has available standards of Nude Aerial Nets, Insulated standards for BT and MT, even Compact Nets, that are always projected in function of the geo-electric conditions of the assisted area, and of the demands of the served customer's quality.

Thus, for configuration of its Corporate Plan of Capital, Elektro defines the Planning For Electric Area–PLANEJ, that is an indicative instrument, for 5 years, of the readiness and needs of Infra Structures for the area, making it still available to the customers of this information, to facilitate facilities of new plants of customers, reducing its costs.

Can be planned like this in advance the necessary capital investments, always with base in the Studies of Market, in total synchronism with the customers' needs, and with the means offered by the System of Transmission.

To this process it is also joined the Plan of Requested Quality. Is defined, harnessed to the new expansions and Systems existent, possible disconformities with the performance of wanted quality, through the Zero Failure Program.

This program defines a series of conjugated basic actions of Maintenances, Overcurrent and Overvoltage Protection, resultants of Know How acquired in the Excellency Distribution Center, that make possible to adapt the Electric System technologically to the demands of the market.

This methodology of Planning, supported by the Base of Information of Elektro, has been responsible for the operation in conditions of planned rest, facilitating fast attendances and of low costs to new customers, avoiding great volumes of capital.

Also, for support to the Existent Market, acts in the sense of guaranteeing the adapted stability of the assetsets, inside of a plan of enough restore to the needs, monitored by the Failure Rates by Blocks of the System and its relationship with the Requested Levels of Qualities.

With adjusted standards of capital expenditure, are enough restorations like 1,9% of the assets by year, for actings as presented in the graphs, that position Elektro as leader in the national electric sector.

## **PASSPORT FOR A NEW BUSINESS ERA**

In fact, we know that the appropriate administration of a good company depends on its human capital, and the technological knowledge for position it ahead of yours time.

ELEKTRO now, close to its new controller, gets ready to face the competitive market, beeing fidelity its unregulated clients, and bringing larger satisfaction to those regulated, through the offer of new services, low costs and compatible profitability to the shareholders'.

Concepts of multi utilities and of administration of sales of energy it comes being introduced, for once again we act ahead of the national scenery, and tuned in with the international atmosphere.