IMPLEMENTATION OF AN AUTO DISPATCH SOLUTION IN A LOW LEVEL TENSION OPERATION CENTRE

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ABSTRACT
The outage management for the low tension level has a direct impact in the client’s perspective. This paper shows the excellent results in the adoption of an auto dispatch way of work, sending information in real time to the mobile work force, with improvements in the recovering time and in the clients perception of the company.

At the beginning of the project, the administrative time (at the dispatch center) was the 30% of the total recovering time. With this project, this time was reduced to 7% of the total time.

In the same way, the average total time of the attention (from the first call to the recovering of the service) was 5.5 hours. With the project, the average time was 2.5 hours.

With the use of leading edge technology at the Call Center and in the mobile work force, the project success in simplify the labor, find and eliminate step with a small contribution to the total effort, and at last, know the real use of the workforce and the promise of solution made to the customers.

INTRODUCTION

The following paper shows the results of the analysis, improvement and evolution during the last years of the dispatch’s crew for the outcall of low tension of the electricity company, CODENSA. Initially, the company worked with a difficult procedure involving different factors to control and many steps for dispatching, which result in a use of more than 30% of the total attention time.

After a detailed analysis, it was decided to implement an information system in line “OMS” (Outage Management System) that allows the feedback, real-time control and interaction with devices used by the crew for their monitoring, report and control of activities like PDA’s and GPS’s. This has generated a positive impact in the efficacy and efficiency of the operation.

CONTEXT

CODENSA is a local company of ENDESA’s business group that offers the service of electric power in more than five countries in Latin America. CODENSA has had the following parameters of attention for the events presented in low tension during the last two years.

- 2’500.000 customers.
- 1.500 outcall generated per day.
- 500 incidents or trips to the fields.
- 40 crews.

The extension of the operation is approximately 16.204 Km² in the rural area and 180 000 km² in the urban area.

Given the importance of CODENSA and because of administrative themes subcontracts the execution of maintenances, which should be invoiced according to what has been executed, being one of the most important processes for the company.

Two years ago, there was a work sequence as shown on figure 1, which had many steps and transference of information. The control process became obsolete since there was the need to speak with every one of the actors of the process to be able to have a vision of the state of the
same one. For the same reason, there was not an answer of the estimate time to the client, who has shown according to surveys, that issues with the service can be presented because of maintenance activities, accidents with the infrastructure and eventualities. But the client was most interested in knowing the estimate time to get the service reestablished, and that the company gets this done.

PREVIOUS PROCEDURE

The previous procedure took form during the course of time, which allowed to make the necessary maintenance check ups but the dispatch of the crew took a great deal of time because it was done manually and it was also done according to the criteria of the contractor in charge of the dispatch. This was the reason why this process took more than 30% total of the attention. On the other hand, the tools that were available did not allowed to have a clear control of the operation in a real time in a short-term. The workflow of this procedure is detailed as follows:

![Diagram of the Attention of the emergency 2 years ago](image)

ANALYSIS CONDUCTED

Upon evaluating the workflow, the following was observed:

- The information should arrive directly from the call center to the corresponding crew without any type of interaction or manual allocation. But instead, it includes too many control actors.
- The real time of the execution cannot be controlled.
- The received information is exposed to errors in the procedures “distribution outcall areas as registered address”, “Inform the crew” and “reception writing and allocation of shift”. That at the end generates a sum of errors of approximately 35% of the total notices received.
- In the "customer registration" procedure there are more than 500 sheets of paper generated that according to the Colombian legislation must be stored for more than five years. This has generated more than 360 folders a year which must be available as a confirmation that there was a trip to the field. This register must be available for review.
- Lack of communication between commercial and operational areas in CODENSA for the verification of technical and commercial information about the client.
- The procedure of allocation did not have priority and it was reflected on large clients who as consequence, did not have a priority attention.

The model (procedure) described previously was functional but lacked tools for the administration, management, operation and control elements to measure the efficiency of it.

DESIGN OF THE CURRENT PROCEDURE

According to the evaluation of the initial procedure the following rules of design were taken:

- Decrease of actors, times and errors.
- Reduce or eliminate transfer of information by manual media (e-mails and radio).
- Use electric information in order to allocate incidents.
- Administration, management and control of the real time process and centralized.
- Consider a new element in a process which is having the control in case something comes up with the attention. for example, issues with any element, or any type of accident with the crew among others (COBT).
- Have the necessary tools to make sure that the client is taken care of in a timely manner. This way, client’s perspective about commitment of the company to give solutions will improve.
- Effective communication between commercial and technical areas.

The following procedure is the result of the interaction of
the operating, commercial, technical and service areas to the client, with the coordination of the IT area of the company. Subsequently, the general diagram of systems and areas that interact in the current procedure.

**Auto dispatch:** System for the attention, allocation and monitoring of notices with its respective incidences.

**Epic@:** Corporate commercial system.

**SACBT:** Aid system for low conduction tension: Management tool for immediate attention of low tension that covers several views of the electric network including public lighting and it could also include events to an average tension.

**Call Center:** For CODENSA clients. The call is taken and the message is given to the proper department to take care of the situation.

**COBT:** (Center of Operation of Low Tension) Personal in charge of monitoring the process. It includes every detail of every notice entering the system, as well as monitoring and controlling of the executed work done by technical equipments on the field. Also, scale incidents that present affection to level the transformer.

According to this, the following process diagram explains step by step the actual procedure for attention of the emergency in relation to the required time during different steps.

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**PROJECT BENEFITS:**

- Decrease in outage total time improving company's image.
- Improve of the customer’s image with two realistic service promises (ETA, Estimated Time for Attention, and ETR, Estimated Time for Repair).
- A common vision of the information by all the areas involved in the outage resolution.
- Less complex operation at Call Center and in the field.
- Logistic online support to the mobile work force, with the use of PDA and GPS.
- An integrated operation center.
- Less information errors and a better way to trace the changes in the knowledge about the problem.
- Location and satellite tracking of mobile ground for it’s management and detection of departures map.
- Better use of the mobile resource, with an efficiency improvement of the process.
- No need of offline data input, with all the relevant information online.
- Central tracking of the real state of the field work, without communication with the crew.
- Focus in the management of the work force, at the operation center, with a more flexible way to reassign work.
• Improvement in the workplace and occupational health by decreasing noise in the control center.

CONCLUSIONS

The automatic dispatch of incidents provides a significant reduction of dispatch times and work allocation, since the information arrives in a simultaneous way to the PDA of the technical equipment of the fields and to the SAC-BT in the COBT- Center of operations of low tension, which allows the initiation of everything needed as soon as the incidents are generated.

The traceability of the times is another benefit of automatic dispatch, since it allows the monitoring and control of all of the activities. This includes everything from the start point to the finish line of the executed work done, by technical team in the field.

The access and management of the information allows the optimization of the process since the invested time to obtain the information in a manual way, is now dedicated to the analysis and verification of the data received.

The automatic dispatch allows to visualize in real time the closing of the orders and the observations of the works executed by the technical team on field, so they can be reviewed by different departments on the same day of the execution.

The implementation of newest integrated technology to optimize processes and increase efficiency in management of resources, gives as a result, improvements an operational, administrative and economic level.

The crew's automatic dispatch offers tools to control and manage the operation in real time (Execution of the operation)