ORGANISATIONAL SOLUTION WITH IT SYSTEMS TOOLS ASSETS MANAGEMENT FOCUSING REDUCTION OF COSTS AND WORKERS SKILLS DEVELOPMENT (PROJECT PSOA…)

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ABSTRACT

Supplying Distribution Services to clients in a very dense urban area (Great Lisbon Network Area - ARGL - has more than 1,5 million inhabitants in an area with 566 km2) stresses the usual Work Flow management with its different systems and multiples interfaces (SAP, SW, SIT, DM,…) along all the process. Main challenge on those processes, involving new technical solutions for IT system tools, requires better methods regarding asset management and organisational restructuring focusing the business development.

Project PSOA manages, from the beginning, to involve workers with different skills and different levels of outsourcing in a pragmatic way, focusing clearly the quantified goals to clients service on a regulated market (for example, a reference quality of information of less than 5 parts per million for the identification of client connections in any instant) in order to improve the basic functions of the systems, procedures, horizontal flows of the business units and equipment functions. An accurate characterisation as well as updated information, in IT systems, regarding the client installation is critical in a service call from the client. During critical disturbed periods, like storms or bad weather, it is necessary to manage jumps from less than ten to several thousand calls.

The IT system tools for asset management has to prove to be a robust solution for the client service, controlling the processes in a simple way from normal changing status to installation refurbishment works management , including acceptable load estimation tools in the network information system (SIT), Project tools (DM) as well as works and materials management system (SAP).

Systems has to integrate third parts (Contractors, Municipalities,..) in order to have an efficient work flow with some shared data information systems interfaces, supporting methods in the decision-making and benchmarking , promoting reduction of costs and quality under new working conditions.

From an operative perspective, it is fundamental that workers main challenges appear as satisfaction factors on a culture of excelling performance aligned with corporate goals, using Systems as tools to improve client services levels. These satisfaction factors have to be controlled through periodic surveys and managed focusing more clients and workers beyond technology and linked to asset management approaches in the new business environment.

INTRODUCTION

ARGL (Great Lisbon Network Area), focus to supply services to Clients through an organization lined up with the best practices , in a complex environment supported in IT System in order to manage supply Services to an area with more than 1,5 million inhabitants (Metering and New Connections, Project, Maintenance, Support Services), with a car fleet travelling more than 2 millions km, making about 3 million Meterings per year and fixing more than 45 thousand incidents, Managing, on an extension about 500 km of new distribution network and 150 km of Public Lighting.

WORK FLOW MANAGEMENT SYSTEMS AND INTERFACES

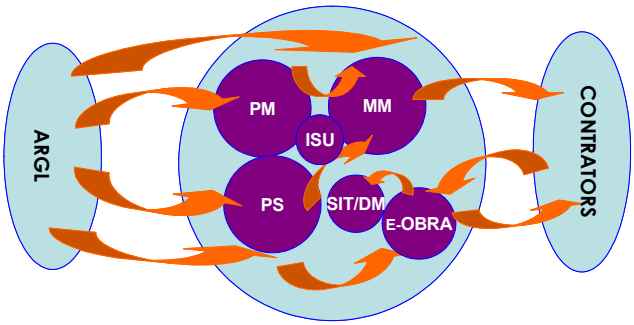


Fig. 1 - IT Systems

Resources along all the Work Flow (Company, Contractors,…) has to be managed in an efficient way, through solutions supported on IT Systems for different areas (Project, Maintenance and Commercial), with modules for management of Investment works Project (PS), Maintenance works (PM), Materials (MM) and Commercial Systems (ISU).

In order to guarantee the actualisation and the reliability of the information in the several systems, it is necessary to maintain a set of workstations supported on compatible systems from different suppliers.

FUNCTIONALITY	SYSTEM	WORKSTATION %
Management of materials	MM	49
Management of maintenance works	PM	25
Management of commercial	ISU	11
Others (SW4, Project)	SIT, DM,PS	15

Fig. 2 - Workstation

All the investments work flow (invoicing, budgeting, controlling, reception,…) is integrated in the same system (PS) on an electronic support (e-mail,…) including communications with contractors. This process integrates also stocks management (MM) and the payment process after work accomplishment.

The Maintenance works has different origins. In case of a default (opened in Dispatching area, generating a default note automatically in PM) it's sent on line to the contractor call center, through a process similar to the described before. For the programmed works the system is managed through an integrated budget process.

In ARGL, are opened annually about 4 thousand Investment works and about 11 thousand Maintenance works.

Commercial processes, is a businesses oriented system covering the commercial value chain (service to customers, works and equipments management, bill calculations, payment,…).

These IT systems modules are interactive with other applications from different suppliers.

GOALS TO CLIENTS SERVICES. IT SYSTEMS AND CRITICAL CONDITIONS

One essential characteristic for ours IT systems are to support flexible solutions following the business evolution in the process of the sector liberalization including Network Technical information systems (SIT supported on SW4 software) in which run the applications for Asset Management and Design Manager (DM) for network project.

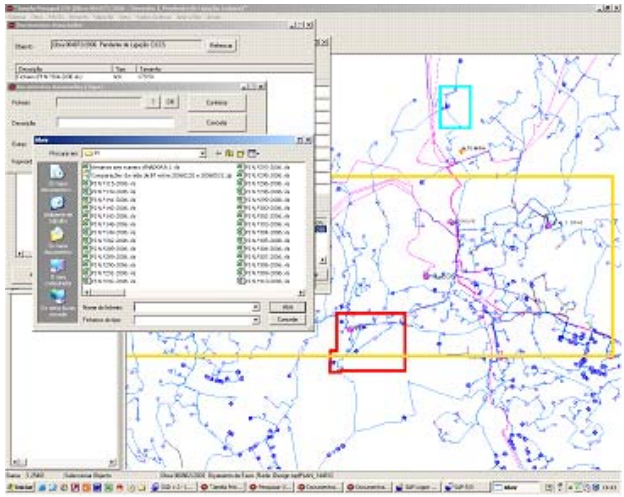


Fig. 3 - DM

This system on a Client/Server Architecture with a relational database has to manage information in real time, with processes and procedures standardized and corresponds to the best business practices.

The representation and characterization of the electric networks, jointly with the cartographic base in digital format used for referential installations, constitutes a strategic resource. The quality of the information and its maintenance are obligatory requirements. SIT guarantees the graphics administration and numeric information, making available Search tools available to the different users. SIT is based on a geographical information system, on which a data model of electric network, is implemented and support a set of applications and interfaces, with different users and systems. With this tool we can introduce all of the modifications that appear in the network as expansion, new extensions or deviations from external requests.

During the period of one year they are loaded in the Technical System Information about 1500 modification in the Medium Voltage Network and 3700 new extensions in Low Voltage Network.

Design Manager (DM) it is an administration tool and projects coordination for Electric Network Distribution, allowing share of information between different areas and departments and different interventions through it characterization and space location on cartographic base.

The application DM is used in a traversal way, among Planning, Project and Operation. DM allows to integrate in a single tool several activities for the development of a project: study, project, execution and actualisation of the database register. It allows to know in real time the activities to execute, to join and that interferes with another areas.

Actualisation of the register in the database SIT is made previous to its operation, when alterations in the existent network are made available. This assumes an added importance once they are to be put in production systems of network administration resident in SIT, as it is the case of the Power-on and of Genesys.

The Power-on is an integrated system for the operational management of activities related with the occurrences in the distribution system, being maintained the actual state of the electric network with knowledge of the normal state of exploration (ENE) including the position of the network elements, the connectivity and direction of the "Power flow". This application allows to programme groups of switching orders, for execution in the future or for simulation of several sceneries where is fundamental to guarantee an updated Data Base.

Along the time were solved some constrains in the applications. Main characteristics to guarantee with this system, are:

- Readiness of the information SIT in each workplace and Up date on-line
- Projects visualization in course and Identifications of new urban areas in SIT with lots object
- Association of documents to the lots Object and Image treatment for DXF (wiseimage)
- Workflow integration (Planning, works, operation,…)

THIRD PARTS SYSTEMS INTEGRATION

Third part System integration was promoted with contractors, essential for global efficiency, as exemplified with the Incidents Management System showing significant reduction of the displacement average time after integration.

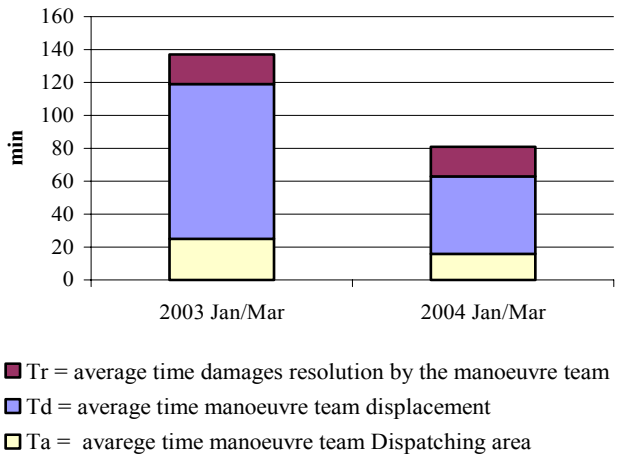
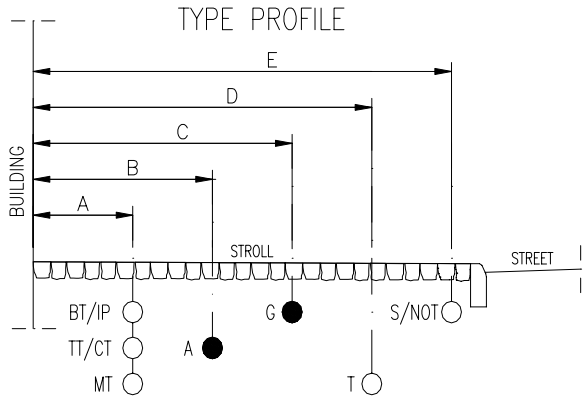


Fig. 5 – displacement average time

Other third part to consider are municipal entities due to ARGL Distribution Network about 80% underground with soil occupation in order to establish common rules for different utilities and to minimize impacts in the urban space, promoting meetings in order to get common goals.



		DEPTH
BT/IP	LOW VOLTAGE / PUBLISH ILLUMINATION	0,60
TT/CT	EDP TELECOMMUNICATION	0,90
MT	MEDIUM VOLTAGE 10kV	1,20
A	WATER	0,90
G	GAS	0,60
T	TELEPHONES	1,20
S	TRAFIC LIGHT (CML)	0,60
NOT	NEW TELECOMMUNICATION OPERATORS (CML)	0,60

Fig. 4 – Subsoil occupation

In 2006 were emitted, by the different autarchies about 385 authorizations for network installation in subsoil (Lisbon 150, Oeiras 100, Amadora 25, Cascais 50 and Sintra 60).

This process was recently improved by representatives entities agreeing on an application as fundamental instrument coordination for underground woks in Lisbon, supported on web. This tool was developed to receive information, independent of the application used by utilities for the infrastructures register, being accessible to all the entities. The access to the system will be controlled by municipal entities providing the access passwords, for the authorized entities. The effort that each entity will have to develop, in an internal procedures level, contribute for the maintenance process of the application, will be compensated by a common supported tool simplifying communications.

SYSTEMS IN CULTURE OF EXCELLENCE

IT system management is a critical factor to create a strong organizational culture helping workers to integrate and share knowledge, norms and values, providing teams with increased satisfaction work related with performance improvement.

These applications, were critical to reach the ARGL goals, with global cost reduction about 20%, interruption time TIE on more 60% and an increase of 15% on clients/ workers factor. Having as reference 2003, it is verified in the following years, a significant TIE improvement and an increase in the clients/ workers factor.

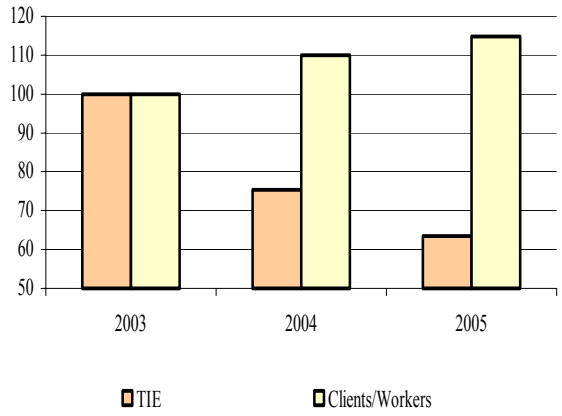


Fig. 6 – TIE and clients/workers

This strategy integrates organisation goals, focusing on its main process an excel expectations culture in employees development.

Fig. 7 – EDP organization goals

CONCLUSION

Project PSOA involves workers with different skills and different levels of outsourcing in a pragmatic way, focusing clearly the quantified goals to clients service.

The IT system tools for asset management has to prove to be a robust solution for the client service. From an operative perspective, it is fundamental that workers main challenges appear as satisfaction factors on a culture of excelling performance aligned with corporate goals, using Systems as tools to improve client services levels. These satisfaction factors have to be managed focusing more clients and workers beyond technology and linked to asset management approaches in the new business environment.

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