EPMAPS CITY PAPER



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EPMAPS (Sustainable Performance) Public Metropolitan Enterprise for Water and Sanitation its mission is to provide potable water and sanitation with social responsibility. It belongs to the Metropolitan District Goverment of Quito.

Coverage and	production
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State of the state

Potable water	98.61%,	8 m ³ /Sec	
Sewerage	93.05%,	1% treated	
Power energy	170 386.6	170 386.60 J (64% to sell)	

Idicators

Supply Continuity	98.53 %	6	
Water Quality	99.97%		
(Compliance with drinking water	standards)		
Not Counted Water	28%	22%(u)	39%
(real losses in water distribution)			

EPMAPS Employees

2.7 employees per 1 000 connections

Total 1800 employees

QUITO capital of Ecuador Population: 2.6 million				
	Km ²	Sq Miles		
Area	4 230	1 633		
Inhabited area	1 089	420		
	inhab/Km ²	inhab/ Sq Miles		
Density	2 387.5	6 190.5		

QUITO capital of Ecuador Because it is a mountain city, Quito is served by 20 treatment plants of potable water which represents 80% of production, the remaining 20% is produced by underground sources.

PROBLEM IDENTIFICATION

Operational disintegrated management of water network and sewerage which produces non-unified information repositories.

- We have 20 treatment plants for Potable water. Each plant has its own Scada system
- There are 5 800 Km of water distribution network divided in 8 operational areas with problems in their shared limits.
- The 5 800 Km of sewerage network is divided in three operational areas with problems in their shared limits as well.

This problem produces:

- Many approximate reports in unfavorable time slots for decision making especially in times of emergency.
- Inability to access important integrated information on line.
- Duplicated operational efforts.
- Many Non-integrated information repositories.

ENTERPRISE STRATEGY PLAN

Goal 17: To count with enterprise integrated and timely information

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The stakeholders for this goal are: EPMAPS Executive personnel, The City Mayor, FONAG NGO, and citizens

KEY ISSUES OF THE IMPROVEMENT OF THE GIS DATA QUALITY PROJECT IMPLEMENTATION

GOAL: The geo-data must be at least ± 30 cm accurate in plant and 25cm in High. It must be updated and complete

Obstacles and difficulties:

- 1. 40% differences between the designed network plans and constructed network plans, and since the first origin of geo-data gathering were the design plans, the outcome after 10 years has been a Geo-data base 60% confident.
- 2. EPMAPS contracts other enterprises to construct and extent new networks. These contractors are reluctant to create and load the final constructed network plan.
- 3. Nowdays we are organizing a cloud repository to allow contractors directly load their final files of constructed networks . It is a set of applications and implementation of work flows not easily accepted by contractors, project administrators and auditors.

KEY ISSUES OF THE IMPROVEMENT OF THE GIS DATA QUALITY PROJECT IMPLEMENTATION (continuation)

GOAL: The geo-data must be at least ± 30 cm accurate in plant and 25cm in High. It must be updated and complete

Interests and Conflicts:

- EPMAPS' interest is to eliminate that 40% of uncertainty in the Geodatabases. Contractors, administrators and auditors don't want to change their customary way of work.
- EPMAPS wants to stop making expensive cadastral works of real position of networks and their characteristics when there is a request from another utility construction.

Favorable and unfavorable conditions:

 EPMAPS is on favor of let the constructors directly load the final constructed network file in the corresponding geo-data base. The constructors, project administrators and auditors don't want to change their customary way of work.

KEY STRATEGIES FOR SUCCESS OF THE IMPROVEMENT OF THE GIS DATA QUALITY PROJECT IMPLEMENTATION

GOAL: The geo-data must be at least ± 30 cm accurate in plant and 25cm in High. It must be updated and complete

Two main scenarios of correction:

1.

Adjustment of the legacy data (80% of the total data):

- Adjustment of the network real position (in all events of network operation or maintenance there should be always a high accuracy surveying control points insertion, alternatively to speed up the process it can be contracted network cadaster projects).
- Geometry correction (topology and geometric network validation).
- Attribute table correction and completeness (software application).
- 2. Adding the new data from constructed network by the contractors themself.
 - Monitor and control the upload of files directly to appropriate geographic databases by contractors of new network projects (Work flows, repositories in the cloud, software applications).

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EPMAPS' role in this problem solution:

EPMAPS is the contracting company

- Enables suitable geo-data bases in the cloud.
- Delivery the necessary software applications for the effect.
- Establishes the technical specifications for hiring.
- Supervises and controls the contractor 's work and products.

Avoid duplicate efforts

The constructors create the data so they must be the ones to load it into the Geo-data bases, the technology is ready to control this scenario. All they need is clear terms of reference and available software tools.

Data quality

The quality of data is critical for decision making, its improvement will imply many simultaneous projects for legacy data, and new work flows, better terms of reference and suitable technology for the new data. We have to get the data producer loads the data into the data-bases himself, there is no need for intermediate work from others.

Data quality improvement projects take much more time than software applications implementations and it is more crucial.

Data Integration

Means interoperation of SCADA, ERP, CRM, and GIS Systems and this must be done in a sustainable way.

Money saving

Avoiding duplicate efforts and costly network cadastral projects, it outcomes a lot of savings (millions of dollars).