Sabesp's Field Force Management with ESRI

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SABESP - BRAZIL
State of São Paulo /Brazil

- 248,222,362 km²
- Total population: 44,035,304
- 645 municipalities
- 40% of Brazil’s GDP – US$ 960 billion

Attended by Sabesp:
- Total population: 29,500,000
- 364 municipalities
Founded in 1973 as a private and public joint-stock company (Government of the state of São Paulo, private shareholders and municipalities) to provide water and wastewater services to the municipalities of the state.
Sabesp: one of the largest companies in the world based on the number of customers

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<tr>
<th>Rank</th>
<th>Company</th>
<th>Country</th>
<th>Million of customers</th>
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<tr>
<td>1º</td>
<td>Beijing Enterprises Water Group</td>
<td>China</td>
<td>28.4</td>
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<td>- China</td>
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<td>2º</td>
<td>Veolia Environment</td>
<td>France</td>
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<td>- France</td>
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<td>3º</td>
<td>Shanghai Industrial Holdings</td>
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<td>4º</td>
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<td>5º</td>
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<td>Brazil</td>
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Domestic market
Domestic and international markets
Operational numbers

**Water**
- Connections: 8,258,000
- Network: 70,800 km
- Population attended: 28.8 million

**Wastewater**
- Connections: 6,705,000
- Network: 47,992 km
- Population attended: 22.5 million

Billing Losses Index: 22.3%
Macromeasurement Losses Index: 29.1%
Financial numbers

Net worth: US$ 4,5 billion

Capex: US$ 700 million/year


In 2014: US$ 300 million – strongly impacted by the hidrical crisis 2014/2015

Employees: 14,167
The project

Area:
São Paulo Metropolitan Region
4,7 million connections
18 million people

The challenge:

How to use GIS for improve the process of network maintenance and operation of water distribution’s network?

10,000 services by day
2,3 million services/year
Capex & Opex: US$ 120 million/year
Teams: 90% outsourced
The scenario (2013)

In maintenance:
- Workorders in a legacy system (not integrated with GIS)
- Manual itineraries – low efficiency and productivity
- Complex and old infrastructure- 50% of pipes with more than 50 years old
- Complexity of São Paulo’s downtown – traffic, interferences of other utilities, municipal laws

In valves operation:
- Drawings in papers,
- No information of operational conditions – 150,000 valves
- Water shutdown’s bigger than necessary
- Customer’s satisfaction problems
- Conflict with regulatory demands
The solution

A GIS application of **dispatch** with 4 modules, integrated with the existing WFM (“SIGES”)

- Otimization
- Monitoring
- Distribution Network Operation
- Dashboard/Indicators
The solution

- Visualization of Services in the map
- Itinerary optimization
- Service's Monitoring
- Operations Registration
- Operations Planning
- Proactive maintenance

Stategic Stage

- 2008
- 2014
The process
Identify the best itinerary for the teams, ensuring high productivity of workorder’s execution.
Monitoring

Application in GIS web to show the teams and the work orders in real time

The operator can assign services to the nearest team or with better conditions of execution

Targets:
- More productivity
- More speed in decisions
- Reduce of costs (cheaper team’s)
- More satisfaction of the consumer
- Traceability of the services in real time

“Map-dashboard” of services
Distribution Network Operation

Application in GIS web to show the Water network distribution and their valves.

The operator set the leakage point and the GIS starts a trace to show what valves should be closed.

The teams in the field receive in a GIS Mobile the valves to close.

The GIS provide the list of the customer’s without water and send to the Contact Center.

Targets:
- More productivity
- Retention of knowledge
- Smaller areas without water
- Traceability
- Less damage in the infrastructure
- Less complaints of customers
Distribution Network Operation

The challenge: what of the 150,000 valves are on?

The GIS Mobile provide:

- The map with the all the valves
- A functionality by the operator can set what valves are on/off
- The GPS captures the coordinates of the valve
- The camera take a photo of the valve
- If the valve are off, it’s open a work order to fix it
- In some months we will have an inventory of the valves
Dashboard / Indicators

Follow the targets of the process:

- By service
- By team
- By area
- By SLA
- By company/contract
- By the regulatory demands
The results

See you on ESRI UC 2016!

(The strong hydrical crisis of 2014/2015 in southeast of Brazil impacted significantly the operations of Sabesp in São Paulo, committing the implantation of the project and the consolidation of its ROI and results)
Thank you!

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