SWAN Americas Alliance 13th Webinar
"Data Optimization: From Bridging Silos to Quantifying Outcomes"
Dec. 7th, 2021

Consolidated Q/A:

- **Alexander Bodoluw (LADWP)**: *What advice would you give a utility trying to leverage their current GIS program and what are the low hanging fruits they can attack first?*
    - **Christa Campbell (Esri):** Low hanging fruits are usually specific workflows you would like to improve. For example, some of our smaller utility clients usually start with a digital map and then share this with field crew and office staff. Having this available in applications makes it easy, along with visual dashboards. These can be configured to further visualize any data the utility has. These are often available across the organization based on licensing.
    - **Eric Bindler (Bluefield Research):** In this report, we spoke with a number of Esri users and clients. One interesting insight I saw is the level of collaboration and engagement between the utility GIS specialist or person driving the project and their colleagues and stakeholders across the organization. This is a really important area to prioritize. GIS specialists getting feedback on what their colleagues would like to see and then building it and showing how data is visualized, how it can be utilized, etc. - All this helps build buy-in across organization.

- **Brendt Thompson (s::can/Badger Meter):** *How do utilities select criteria for input data? Is that by Optimatics or by the utility? Do you see differences in the selection process based on utility size?*
    - J**aclyn Gorman (Denver Water):** We had specific criteria we used, but to prepare for optimization, we did want to have a partnership with Optimatics. We worked with their team to figure out equations for AI to use. It's a lot of testing and back and forth to see what immediate feedback is not to only pick our normal criteria, but other key elements.
    - **Joshua Cantone (Optimatics):** We were involved in the baseline functionality and do have some specific criteria for the utility we work with. The weight of the criteria was determined by the utility as they moved along the project. For example, we also work with WSSC Water with some different criteria. Some recent ones with smaller utilities also see slight variations. Either way, we see both small and large customers benefit from this, with the exception of those with very small pipe projects that may not see as much

relevance.

- **Bhavin Bayani (GHD):** *Which analytics and visualization platform Specific Energy uses?*
    - **Perry (Specific Energy):** We use the SecureCloud platform which can be accessed by a live user interface via any web browser. We also have smartphone applications. More on our website: www.specificenergy.com

- **Youri Amerlinck (Aquafin):** *Do I understand correctly that Optimizer is an optimization/minimization algorithm? Are the optimal scenarios selected automatically?*
    - **Joshua Cantone (Optimatics):** Optimizer is a decision support platform that uses evolutionary algorithms. Optimizer is a desktop user interface that allows users to formulate different optimization problems for a range of use cases. In the interface users can integrate different data sources, define alternative options/strategies (e.g. pipes available for replacement), design criteria (e.g. risk, community impact, etc.), objectives and define scenarios. From there Optimizer will automatically assess different combinations of options/strategies and assess them against different criteria. Ultimately it will output optimal plans for the user to review and refine.

- **Jonathan Keck (Water First):** *Are AWIA requirements altering/augmenting your overall approach here in any way? Measures of infrastructure resilience. Especially going forward?*
    - **Joshua Cantone (Optimatics):** Resilience is definitely a key criteria for a number of our customers. The definition of resilience can often mean different things to different utilities but Optimizer has certainly been utilized to help identify strategies that maximize resilience. An increasing number of clients are using Optimizer to ensure that they are prepared to handle extreme events (e.g. climate, earthquake, blackouts, etc.) whilst balancing the required investment.

- **Youri Amerlinck (Aquafin):** *Is optimizer only available for water distribution networks?*
    - **Joshua Cantone (Optimatics):** Optimizer is used for wastewater and stormwater networks as well. Really, Optimizer as a platform can be adapted to any core optimization problem. We have use cases in transportation, public lighting, and heating/cooling as well.

- **Bhavin Bayani (GHD):** *Denver Water, is there an environmental justice aspect considered in the model you presented?*
    - **Jaclyn Gorman (Denver Water):** No. The Denver Water main replacement model is still fairly reactive and is highly focused on break rate, soil conditions and material cohorts. There are consequences of failure factors considered within the model including water quality issues, replacing and removing lead service lines, maintaining fire flow standards, and reducing legal costs and safety issues. We do maintain a critical customer list that includes venerable members of the community that is used for the optimization.