

## Data Analytics Career Track

### Southern Water Corp Case Study - Economics Overview

**Southern Water Corp. (SWC)** is an Israeli water desalination company that sells fresh water for three customer segments: Residential, Public, and Private. Since the demand for agricultural and residential use is rising, Southern Water Corp. needed to maximize the availability of its three desalination plants. This has resulted in increased revenue for the calendar year. While the increase in revenue is fantastic, Southern Water Corp does not want an unsustainable rise in costs.

Previously in the financial section, you helped management understand how the business is faring from the Revenues, Expenses, and EBIT perspectives. You also covered the EBIT Margin which gave management a good understanding of the revenue-to-expenses ratio.

In this case study, we're going to unpack how economic factors impact Southern Water Corp business. SWC competes in a highly contested market: the open water market, which is split into several smaller markets. In this market, water is traded by the mega-liters at a price known as the **Water Market Balancing Price (WMBP)**. The WMBP is the settling price between water buyers and sellers.

The WMBP is influenced by supply and demand like any other market. If there is more water demand from customers, the price should theoretically increase. The reverse also holds true – if there isn't enough demand, the price will fall until we hit an **equilibrium** point where the market supply and demand are balanced. It's important that we can understand and model these market demand factors to identify the periods where demand is highest. These periods represent the ideal opportunities to generate revenue and sell more water.

This then ties into our next concept – **cost-effectiveness desalination plants**. If SWC's desalination plants are less cost-effective than the competition's, then other people will buy the competition's desalinated water. Think about it: if you were choosing between two companies which produce the **exact same product and specifications**, you would likely go with the one which is cheaper.

**This is where you come in!** With the knowledge and foundations you've established across the Economics Module (Unit 7) – you're going to take a deep dive into the world of water markets and help Southern Water Corp. better understand the economic profile of their market.

With management very much aware of the tight-competition in the Desalinated Water Market, they have requested the following Economic Data Analysis for you to complete:

- 1) **Economic Market Analysis** – What trends are we able to identify when comparing the **Soft Water Market** versus the **Hard Water Market**? In other words, do we see any type of **price elasticity/inelasticity when analyzing these markets**?
- 2) **Cost-Effectiveness** – How cost-effective are the three (3) desalinated water plants when compared to the overall market? Are there periods where SWC is **not** cost-effective when compared to the overall WMBP? These are periods SWC can expect to bring in less revenue.
- 3) **What-If Analysis** – There is an ongoing consensus within the team that the best time for SWC to perform a major desalination water outage is in the first quarter of the year. However, this hypothesis needs to be tested and validated to see if the first quarter is truly the best – or whether there exist more desirable periods to perform the major desalination water outage.

Ultimately, your challenge as a data analyst is to tell a meaningful story that drives **meaningful** insights. For your economic analysis, you'll be measuring analytical success by ensuring you can clearly tell the executives at Southern Water Corp a meaningful story that unpacks the elasticity analysis between soft and hard water products. This is to be followed by a cost-effectiveness evaluation for each desalination plant and whether you can clearly identify the best periods to perform a major outage.

This assignment is broken up into four (4) overall components in each section. We are going to ask you to analyze one of the three question(s) listed above and tell us the overall story you've uncovered.

In Part I of the assignment (Unit 7.3) you're going to tackle Market Elasticity.



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In Part II of the assignment (Unit 7.5) you're going to tackle the Economic Cost-Effectiveness Story.

In Part III of the assignment (Unit 7.6) you're going to tackle the What-If Analysis part of the story.

Lastly, in Part IV of the assignment (Unit 7.6) you're going to conclude your overall analysis with a PowerPoint Presentation.