

# Philip Morris International

## THE CHALLENGE

PMI's product mix is transitioning from cigarettes to electronic formats. Across their network of 40+ manufacturing sites plus external providers, they needed to figure out how to best their resources to meet demand while maximizing the NPV across their existing assets and capital expense allocations.

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## THE APPROACH

River Logic built a Digital Twin of the client's full value chain looking out 10 years in monthly periods. This representation included the key physical constraints, such as which raw material can supply a given region, plant throughputs, etc. as well as revenue and fixed/variable costs. Furthermore, it also included forward looking financial statements – including depreciation schedules, taxes and capital expense budgets. The model enabled handling massive variability in sourcing decisions, asset allocation decisions, footprint extension and conversion decisions, to name a few.

They took data from multiple sources across 70 distinct input tables that included fixed and variable manufacturing and distribution costs, the location of the manufacturing sites, machine and product specifications, operating efficiency (OE), duties and taxes, capacity by asset and format and other important parameters defining the global manufacturing and product sourcing network. Scenarios could be run on each of the mentioned parameters, such as:

- What if instead of an average OE of e.g., 70% at this factory, it went to e.g., 75%? What would that mean to the business?
- What would happen if volumes significantly increase in a given market or region?
- What are the actions necessary to ensure uninterrupted supply?

[> Click here to read the Forbes Article](#)

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## THE OUTCOME

- Established monthly vs. annual process to capture opportunities in a long-range plan
- Extended planning horizon from 2 to 10 years while accommodating increased complexity and scale
- Scenario analysis lead time went from weeks to days
- Captured significantly more parametrized data variables in the River Logic model than what they were using with the Excel models
- Identified hundreds of millions in cost savings
- Established a roadmap of how to improve asset utilization, down to the factory and machine level
- Defined an optimum sourcing network, highlighting the fastest and most cost-efficient way to supply markets at a global level

PMI is in the process of expanding their digital twin to include in-market distribution optimization and raw material purchases.

“We are talking payback in couple of hours. The cost savings opportunities identified run into the hundreds of millions of dollars over the period examined.”

*- Dr. Alexandros Skandalakis – the Director Global Manufacturing Capacity, Strategic Assets and Capital Expenditures*