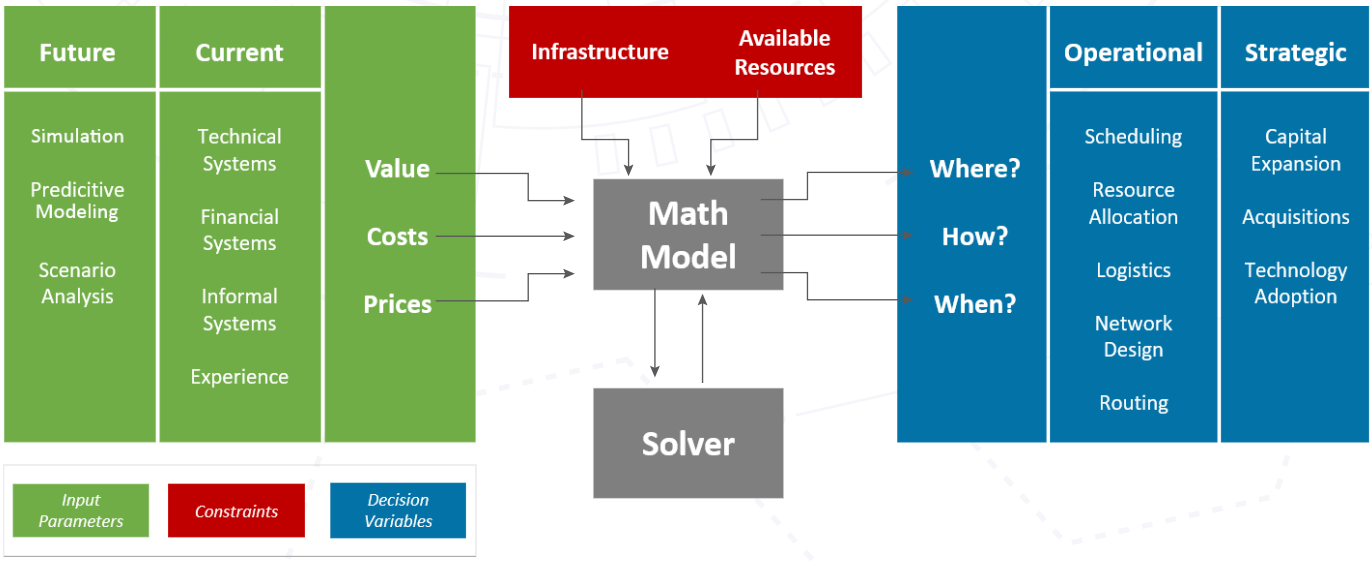
Enhancing analytic-based decision support

Elytica provides optimization, simulation and predictive modeling as an on-demand cloud-based service, allowing its clients to focus on their core business. We take care of the technology requirements and provide the mathematical modeling expertise to enhance analytic-based decision support across all levels of an organization. More specifically, our solutions allow for the optimization of strategic objectives by prescribing the best course of action at an operational level.

Capturing the business logic within a mathematical framework

The Elytica approach starts by understanding the business problem and by uncovering the business logic. A mathematical model captures this logic by relating input data to a set of decision variables, and by considering operational constraints.



Separation of mathematics and solver technologies

The computation of solutions to an optimization problem requires the application of a solver. A clear separation of the mathematical model and solver allows the use of multiple solvers (proprietary or open-source) in a distributed cloud environment. The onus is on Elytica to select the most effective and efficient solver to solve a specific optimization problem.

Rapid deployment of optimization solutions

Mathematical models are specified using a typesetting language and the Elytica interpretation engine solves these models by applying the most appropriate optimization solver. That is, the traditional implementation phase of an optimization solution, which involves a lot of coding, is completely bypassed.

A repository of optimization models

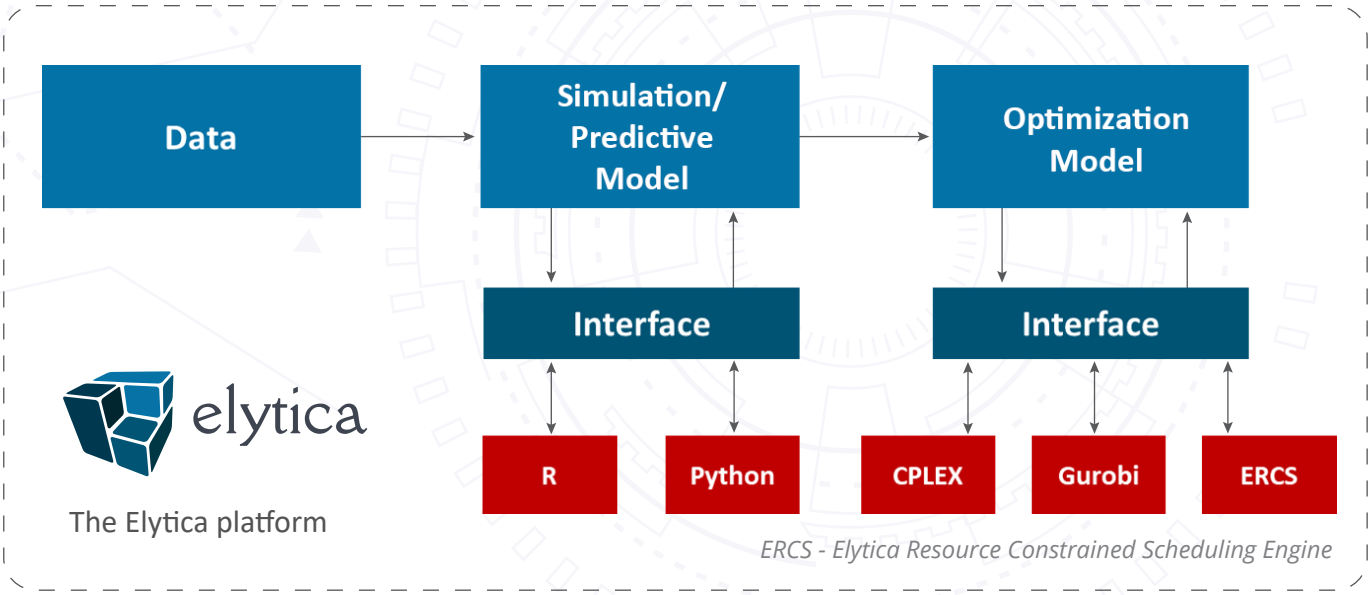
Focusing more on the mathematics of optimization enables the Elytica team to capture the intricacies of all subsystems inherent to a business problem. Independence from specific solver technologies allows the coupling of optimization models related to different subsystems through a common objective function.

Simulation & Predictive modeling as a service

Optimization models are data-driven and are in most cases dependent on data generated by simulation and predictive models. The Elytica platform integrates simulation and predictive modeling with optimization by supporting programming languages like R and Python.

Integration of Elytica services

Optimization models captured on the Elytica platform are accessible from within other systems. A Microsoft Excel add-in and the Python package elytica-dss, provide an easy-to-use mechanism for transferring data to the Elytica platform and for retrieving optimization results. Computing resources are managed through the Elytica platform and scalability is achieved through a computing cluster.



The Elytica team

The Elytica team comprises highly skilled technical specialists with more than 20 years experience in solving optimization problems. We have mastered the art of translating business logic into mathematical models and we have gained the experience to apply appropriate technologies for the efficient computation of optimization solutions.