**Project**

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**Optimization Strategies for Dietary supplement development: A case study of Nexgen Pharmaceuticals**

**Abstract:**

The goal of this project is to optimize the decision of development of a dietary supplement product at Nexgen pharmaceuticals. We will be using a decision tree analysis to figure out the best decision to go ahead with nutritional product development or not. Essentially, at the beginning there will be only one decision to be made: to invest in clinical trials or not on the dietary supplement development project.

The nature of a nutritional supplement development project is characterized by large capital expenditures, and long timelines. This makes the decision analysis of such projects and companies a challenging task. As mentioned above, we will work on creating a decision tree that can be built using PrecisionTree to see more clearly the decision, outcomes and posterior probability nodes of the project.

We will also work on cutting the costs which is essential part of every business. The R&D department of Nexgen pharmaceuticals is looking to schedule the minimum number of scientists required at the firm per day for this project. We will be using GRG Non-linear optimization for scheduling the research scientists working on the dietary supplement project. We will also review associated sensitivity reports to see how coefficients of objective changes with changing cells value, allowable increase and decrease for both the models.