InsightOPTIMIZER™

MAXIMIZE REVENUE AND MINIMIZE COST WITH OPTIMIZATION

Today's businesses are faced with surmounting pressure not only to appeal to the right audience but also to achieve maximum results with minimum loss under tough constraints. Knowing which customers to target is just half the battle, the other half is balancing internal bussiness affairs such as goals, constraints, or budgets.

Sometimes predictive models are just not enough.

Predictive models, such as regression, help companies to easily capture relationships and identify patterns within their data to pursue customer segments that are most likely to behave in a certain way. Unfortunately, in a real business scenario this is not enough. Predictive models identify customer interactions that are likely to be effective but may not necessarily be profitable to the business. This becomes even more complicated when dealing with a multitude of customer interactions under complex constraints on a daily basis.

So how do businesses, with a multitude of interactions, decide which strategies to deploy?

InsightOPTIMIZER is an optimization software that can be applied to a variety of optimization problems arising in deploying strategies based on model predictions.

Optimization Yields Business Value

- *Maximize or minimize any metric including custom KPIs to reflect your business while maintaining real-world constraints*

- *Scrutinize each business constraint to quickly determine areas of declining returns or opportunity loss allowing either savings in operations or more intelligent deployment of resources*

- *Extend credit offers to clients while properly balancing potential revenue and loyalty with appetite for risk*

- *Optimize coupon layout thereby raising customer engagement by changing creative to better reflect customer relevancy*

- *Balance anti-churn strategies while maintaining the profit health of the business*

- *Better plan via what-if scenario analysis to provide your business with the ability to achieve the best ROI through better allocation of limited resources*

- *Reduce costs in collections by automatically choosing economical treatments that best match a balance between cost and recovery*

- *Continually balance the needs of the business with the strategies and tactics of competitive business practice.*

Angoss

Predict. Act. Perform.

It maximizes or minimizes any user-defined metric or KPI representing your business objective while maintaining relevant business constraints.

InsightOPTIMIZER is capable of solving optimization problems arising in credit risk management, marketing/CRM, collections, logistics, and many other areas. One example is channel optimization in marketing campaigns: Based on historical multi-channel campaign response data, find an optimal channel for each customer subject to business constraints (cost, total budget, etc.). In this example, InsightOPTIMIZER will solve a large optimization problem - typically for tens of thousands of variables - to find the optimal channel per customer.
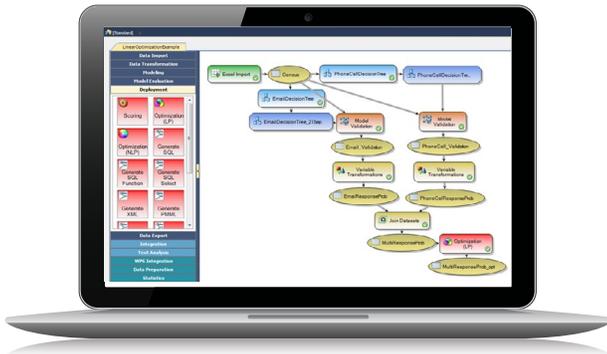
InsightOPTIMIZER, using optimization as a prescriptive analytics approach, can help your business:

1. Solve complex business problems and test multiple scenarios
2. Automate your decision making process
3. Maximize returns while minimizing losses and limiting costs
4. Easily formulate optimization problems

InsightOPTIMIZER Features

- *Quick and easy formulation of optimization problems in a flexible and user-friendly interface. The objective function and constraints are defined in intuitive wizards*

- *Test various scenarios by running optimization with customized constraints and observing the effects on your business objective metric*

- *Linear optimization: linear programming solver based on the revised Simplex method*

- *Nonlinear optimization: Boundary and Linear Equality/Inequality Constrained Optimization (BLEIC); Bonmin and IPOPT solvers for nonlinear programming problems*

- *Power and efficiency in solving large problems: Special numerical algorithms handle large problems while avoiding computational complexity issues*

- *Easy-to-understand solution advisory: Problems resulting in unbounded or non-existent solution are automatically diagnosed and appropriate warnings are provided*

- *Modeling results from any analytic environment can be used as optimization inputs in Angoss*

Angoss
Predict. Act. Perform.

Solve complex business problems and test multiple scenarios

InsightOPTIMIZER enables users to solve complex decision problems that may involve numerous constraints and complex business objectives.

In order to determine the best customer engagement strategy (promotion, treatment, channel, offer), users can test multiple scenarios to evaluate the effects of changing the problem assumptions - such as unit cost for specific marketing channels, or revenue per product sold via that channel. Similarly, users can assess the effects of changing business models (such as price, promotion timing, etc) on an optimal deployment strategy.

Automate your decision-making process

InsightOPTIMIZER automates the decision-making process by providing users with the capability to construct visual process flows on a workflow canvas. With the help of wizards and an expression editor, users can define objective functions and constraints for any optimization operation in the workflow - significantly contributing to time savings and effiency gains. Additionally, with a single click, the optimization process can be rerun on a refreshed dataset.

Data preparation and profiling with advanced data visualization capabilities help users explore or transform the input data before running the optimization, if necessary.

Maximize returns, minimize losses, and limit costs

To formulate the optimization problem users specify the objective metric to maximize or minimize; the

Features Continued

- *Interactive wizard provides the ability to partition and sample data using random and balanced methods*

- *Simple solution reporting and visualization*

- *Integration with the languages of R and Python provides the additional benefit of statistical programming capabilities. Programs written in R and Python can be directly embedded in the Angoss workflows*

- *Integration with the language of SAS is also available in the product combination with KnowledgeCORE*

- *Advanced visual analytics available via Tableau and Qlik integration*

desired constraints (including cost, revenue, budget, volume per record, total budget or volume); treatments to assign and possible treatment combinations. By maximizing returns and minimizing losses with optimization, companies can ensure that they are always making the most of their resources.

Easily formulate optimization problems

Optimization problems are formulated using intuitive and user-friendly wizards with an expression editor option for defining complex metrics and constraints. For linear optimization, the wizard eliminates the need to write code when formulating the business problem.

Angoss
Predict. Act. Perform.

To simplify the formulation of the problem, the wizard guides the user to specify cost and revenue elements of the problem as well as the constraints on the treatment strategy on the customer level.

For nonlinear optimization, an advanced Expression Editor dialog is used to enter SQL expressions for the complex objective function, and an intuitive interface is provided for defining the constraints.

InsightOPTIMIZER Differentiators

- Ease of use: simple dialogs and wizards guide the user through constructing powerful optimization problem formulations that solve real business problems.
- No coding required to formulate linear optimization problems.
- Both record-level and dataset-level optimization are readily available.
- Special dialogs for common portfolio-level problems, as in the case of channel optimization, credit potfolio risk assessment, and large scale routing problems.
- Automatic generation of the final customer/ record-level treatment strategy.
- Integration with the languages of R and Python, all within a single environment. Programs written in R and Python can be directly embedded in the Angoss workflows.

About Angoss

Angoss is a global leader in delivering predictive analytics to businesses looking to improve performance across risk, marketing and sales. With a suite of big data analytics software solutions and consulting services, Angoss delivers powerful approaches that provide you with a competitive advantage by turning your information into actionable business decisions.

Many of the world's leading organizations in financial services, insurance, retail and high tech rely on Angoss to grow revenue, increase sales productivity and improve marketing effectiveness while reducing risk and cost. Headquartered in Toronto, Canada, with offices in the United States, United Kingdom and Singapore, Angoss serves customers in over 30 countries worldwide. For more information, visit www.angoss.com.

Corporate Headquarters
111 George Street, Suite 200
Toronto, Ontario M5A 2N4
Canada
Tel: 416-593-1122

European Headquarters
Enigma House
30b Alan Turing Road
The Surrey Research Park
Guildford, Surrey GU2 7AA
Tel: +44 (0) 1483-661-661

Angoss
Predict. Act. Perform.