

Improve Marketing ROI: Predictive Analytics Using Real-time Data Bruce Ratner, Ph.D.

Company management is putting an unprecedented onus on its marketing team to justify the budget for implementing its marketing decisions and strategies because today's economic conditions are way over the line of the conventional marketing-wisdom: Too many dollars are spent without a shine of an increased ROI. Management is urgently calling for the work of a heady marketing approach to RIO-improvement, namely, predictive analytics using *real-time data*. The everyday statistical methodologies using real-time data are varied, at least to the extent of my literature search that has not found two articles of the same thinking on the topic in question. The literature is replete with traditional statistical approaches that use crude and temporary expedient handling of real-time data, yielding results attended by well-grounded suspicions of being unsound.

The purpose of this article is to present the GenIQ Model as an effectual predictive analytic method for real-time data. [1] GenIQs engine belongs to the subfield of evolutionary computation known as genetic programming (GP). [2] GP is a probabilistic algorithm that iteratively **transforms** a set (**a population**) of models into a *new* generation of the population that has **offspring models** (probabilistic better than their *parent* models of the current population). [3, 4, 5] When a population is complete, the most recent real-time data are input into the GenIQ-GP process to evolve the *next* generation of the population. The process of inputting the latest real-time data is terminated with the (best) generation of the population, in that **no improvement** is obtained. [6] I present a case study in the business services sector.

References and Footnotes

1. [What is the GenIQ Model?](#)
2. [What is Genetic Programming?](#)
3. **Transforms** – by using biological-like (genetic) operators: reproducing, mating and mutating.
4. **A population** consists of a number of models. The number (aka, the population size) is set by the data modeler at the onset of running a GP application. It cannot be changed once the application has started. If good models are not produced, the data modeler initially focuses on adjusting the population size based on various rules of thumb, or his/her experience.
5. **Offspring models** – new models produced by the genetic operators.
6. **No improvement** – based on the data modeler's evaluation of the *best-of-generation* models.