

## NIQ Inventors Develop Leading Intelligent Analytics Platform



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NIQ Inventors and Product Innovation Leads Hao Chen and Lanshan Han developed an innovative system that determines product importance for a retailer—the technology helps prioritize retail merchandising decisions such as pricing, promotion, and assortment. The tentative name for the system is NIQ Advanced Marketing Mix Modeling Engine. **The system is fully owned by NIQ, encompassing intellectual property rights from end to end, including a patent pending.**

The project first started in 2021. Hao and Lanshan successfully developed the technology from start to finish in just one year. Hao said their primary motivation was to create a comprehensive modeling system capable of capturing the holistic effects of marketing activities in marketing mix models to understand their true impact across a brand and over time.

Previous systems for retailers estimate parameters through a multi-stage process. Instead, the NIQ developed system simultaneously estimates all unknown parameters.

This is achieved through a constrained maximum likelihood approach and a Hamiltonian Monte Carlo algorithm. The developed modeling system automatically incorporates common business rules ensuring that the results can be immediately activated by the end user.

- Hao Chen, NIQ Inventor



The project is very adaptable. The newly developed system demonstrates the ability to efficiently handle large volumes of clients' data within a reasonable timeframe. Its scalability allows it to process millions of observations effectively. The NIQ-owned and developed system stands out as a leading intelligent analytics platform in the current market.

Product at NIQ work to develop new systems, both for our company and the marketplace. The work done by Product Teams fill NIQ Strategic Objectives, including **Be the strategic partner to retailers.**



**Be the strategic partner to retailers** by delivering relevant retailer solutions that ensure sustainable, term relationships, securing efficient access to sales data