> Thursday, April 22nd, 2021
16:00 - 17:30

MARKETING & SALES

IÉSEG SCHOOL OF MANAGEMENT

EMPOWERING CHANGEMAKERS FOR A BETTER SOCIETY

"AUTOMATING THE B2B SALESPERSON PRICING DECISIONS: A HUMAN-MACHINE HYBRID APPROACH"

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ABSTRACT

In a world advancing towards automation, we propose a human-machine hybrid approach to automating decision making in high human interaction environments and apply it in the business-to-business (B2B) retail context. Using sales transactions data from a B2B aluminum retailer, we create an automated version of each salesperson, that learns and automatically reapplies the salesperson's pricing policy. We conduct a field experiment with the B2B retailer, providing salespeople with their own model's price recommendations in real-time through the retailer's CRM system, and allowing them to adjust their original pricing accordingly. We find that despite the loss of non-codeable information available to the salesperson but not to the model, providing the model's price to the salesperson increases profits for treated quotes by 11% relatively to a control condition. Using a counterfactual analysis, we show that while in most of the cases the model's pricing leads to higher profitability by eliminating inter-temporal human biases, the salesperson generates higher profits when pricing special quotes with unique or complex characteristics. Accordingly, we propose a machine learning Random Forest hybrid pricing strategy, that automatically allocates quotes to the model or to the human expert and generates profits significantly higher than either the model or the salespeople.

Keywords: business-to-business marketing, field experiments, machine learning, pricing, sales force

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