

Setting prices centrally, w/optimization yields higher profits than local pricing

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A study on granting local sales people pricing discretion shows that profits improve by up to 11% when local sales forces are empowered to negotiate with customers. However a centralized system that uses optimization techniques and limits local sales discretion improves profits still further, by an additional 20%. The research appears in the current issue of *Management Science*, a publication of the Institute for Operations Research and the Management Sciences (INFORMS), the leading professional association in analytics and operations research.

"This hybrid approach balances the analytic capabilities available to the headquarters with the deal-specific information available to the field to gain the best of both worlds," write author Robert Phillips.

[The Effectiveness of Field Price Discretion: Empirical Evidence from Auto Lending](#) is by Phillips and Garrett van Ryzin, both of Columbia Business School, and A. Serdar Simsek of Cornell University (now at the University of Texas, Dallas).

Business literature includes many debates whether profits are greater when prices are set centrally or when local sales people have permission to offer customers discounts. The tension focuses on headquarters' ability to leverage enterprise-wide information and advanced analytics like pricing optimization versus field sales staff's ability to use deal-specific information to negotiate a better price.

To explore the debate, the authors analyzed a proprietary data set from

an automotive lender who offered loans exclusively through dealers. In the auto lending industry, price negotiation is the norm. The auto lender generated a price list that specified rates for various types of loans; dealers had the authority to change the rate within limits for individual deals.

Often company officials set a list price for products and give local sales staff discretion to discount by as much as 15%.

The authors examined the data and found that local sales staff, applying their discretion to negotiate, charged more profitable prices than the list rates. Using their pricing discretion, the sales force increased profits by 8.9-11.3% compared to the list price.

Sales people vary in their negotiating skill, and some extend discounts that are more generous than necessary. With this in mind, the authors examined how well the lenders set list prices.

They found that the lender's list rates, as structured, didn't provide the highest possible profits. When the authors applied optimization techniques and substituted rates generated by a "data-driven [profit](#) maximization procedure," which utilizes data of all nationwide sales, they found that the lender could significantly increase profitability, about 20% more than local sales staff can.

Based on their findings in this case, the authors offer a hybrid approach. They recommend that central offices use optimization to improve list prices and that they extend narrowed discretion to local sales people to negotiate with customers.

"Should people or algorithms set prices? Our research has shown that, in most cases, the answer is 'both,'" concludes Phillips.

Provided by Institute for Operations Research and the Management Sciences

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