European Fashion Stores Edge Past U.S. Counterparts

Zara masters replenishment using optimization models

This column comes to you from Triangle Towne Center in Raleigh, N.C., where many shoppers appear to be getting a jump on the holidays. For this editor, today's mall visit is all about fashion, not Santa shopping. My teenage daughter and her best friend, who recently returned after living in London for two years, are checking out winter jackets.

I was curious to hear, in the eyes of a 15-year-old, how shopping in the United States compares to European choices. Not good, I learned. Our young friend preferred the store settings in London and other European cities, where malls were a rarity and, even when stores were a chain, they seemed more unique.

What about selection? The complaint I hear most often from my daughter is that everything looks so trendy, "There's never anything individualistic or edgy." Her friend echoed the sentiment: Fashion hardly exists in the United States, but in the U.K. fashion was cutting edge.

Her next comment spoke to the essence of retail logistics: "The European retailers were better at having in the stores what they displayed in their windows. Here, it's confusing because there's so much stuff in the stores that doesn't go together or it's disappointing because they never have what made you go into the store in the first place."

Translated from teen-speak to supply chain terms: That would be failure to execute promotional sets and persistent out-of-stocks.

European retailer Zara is known for delivering hot, edgy fashion—and for fast-paced inventory turns. I recently talked with Professor Jeremie Gallien of the MIT Sloan School of Management about the inventory-optimization models he developed for Zara, in collaboration with professors Felipe Caro, Juan Correa and Jose Antonio Ramos from the UCLA Anderson School of Management and all graduates of the Sloan School. Together they defined mathematical algorithms that would optimize Zara's replenishment processes.

"Zara replenishes all of its stores two times each week, which creates an enormous amount of decisions to determine every garment and every size that is needed at every store," reported Gallien.

Replenishment decisions were being made by what Gallien described as "an army of people who spent an entire week doing data entry and very little time thinking about the massive decisions that had to be made or the trade-offs between stores to balance inventory."

As Gallien explained, Zara would prefer to move a set out of a store if some pieces or sizes were out of stock, rather than have an incomplete offering. Following a pilot experiment of the optimization model on 15 "references" (i.e., SKUs) to approximately half of its worldwide store network, Zara deployed the optimization model for replenishment of all references across its entire portfolio. The optimization model enables Zara to evaluate what items are needed in each store to meet dynamic demand fluctuations.

"We think the potential impact of the model is a 3% to 4% increase in sales at no additional cost," reported Gallien.

U.S. retailers could learn from Zara's fashion statements as well as its new replenishment models. As for my quirky teen shoppers, they left the mall empty-handed and feeling fashion-deprived.

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