

## USING MACHINE LEARNING TO OPTIMIZE RETAIL PERFORMANCE



**Data Analytics:** How retailers can use descriptive, predictive, prescriptive and cognitive analytics to create better retail forecasts based on consumer and user behavior.

The following are tests conducted in the Retail industry by Massachusetts Institute of Technology (MIT) and the Oracle Retail Science team.



### ONLINE FLASH SALES:

SALE



Emerged in mid-2000s

\$4B INDUSTRY

17% annual growth in last 5 years (US)

### TEST #1:

A collaboration with an on-line flash sale retailer seeking help with managing inventory and maximizing sell-through.

**The Goal:**

To see price increases impact on revenue & market share.



**The Challenge:**

Set pricing to maximize the opportunity during a product's 1st exposure to the market.

**Scope:**

- 6 month timeframe
- Price increase on 3,000 products (3,000 control group)  
Split into 5 categories (A-E)  
A = least expensive  
E = most expensive

**Algorithm-Driven Pricing Results:**



A's - price increase didn't impact market share

↑  
**10-12%**

B,C and D's - increased revenues

E's - increased revenue by ↑ **22%**

### TEST #2:

A large-scale ecommerce site seeking a solution that would simultaneously increase revenue, profit, and market share.

Algorithm applied to premium product sales (smartphones & expensive televisions).

**Algorithm-Driven Pricing Results:**

↑  
**471%**

Revenues

↑  
**366%**

Profitability

↑ **391%**

Unit Sales

"The company reports that these end-to-end technologies have not only improved profit, revenue, and market share, but have also increased the diversity and range of product the company is selling on a day-to-day basis."

—Prof. David Simchi-Levi,  
Professor of Engineering Systems,  
MIT

## ABOUT ORACLE RETAIL SCIENCE:

The Oracle Retail Science team works in partnership with participating retail customers and researchers from major universities like (MIT) to further the advancement of knowledge and solutions that enable new capabilities in predictive and individualized retailing.

50+ U.S. patents dedicated to retail processes and technologies

Works with 20 of the top 20 retailers worldwide

Turns data into \$ with consistent user & data scientist experience

Gets you in the driver's seat with innovation workbench

Helps you stay ahead with latest machine learning & AI solutions

Achieves lowest TCO with a full suite of optimization solutions

LEARN MORE ABOUT MACHINE LEARNING: DOWNLOAD THE ORACLE RETAIL SCIENCE GUIDEBOOK TODAY



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Escaping Cannibals and Forecasting the Unknown: Machine Learning Applications in Retail Pricing and Forecasting