Predicting Future Retail Performance Based on Key Trigger Events

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The Problem

Background:

- Modern furniture retailer with 70 brick and mortar stores along with direct (web & phone) business

- $170 million in annual sales – with a dataset that includes 8 quarters of of transactions with approximately 60k observations per quarter

- The Problem: Based on the dataset, what trigger events can be identified that will lead to increased performance throughout the chain?
    - ➤ Sale of a signature products?
    - ➤ Presence of multiple store locations in a single market?
    - ➤ Effect of multi-unit orders?
    - ➤ How does prevalence of discounts effect profitability?

- Conclusions from these predictions can help steer corporate strategy, company messaging / marketing and store sales priorities

The Data

<u>Dataset</u>

- The dataset is actual data for the fiscal years 2007 and 2008 [1]

- Approximately 60k observations per quarter

- Observations are broken down to unique ItemCode / SKUCode (can include multiple units of same SKU).

- Features for the dataset include:
  - ShipDate (date the order left DC)
  - OrderNumber (can apply to multiple products / lines)
  - ItemCode, ItemDescription, SKUCode (unique product description)
  - OrderLocation (which store or web / phone)
  - Department (which buying group is responsible for the ItemDescription)
  - UnitsSold, TotalNetRevenue, TotalCOGS (sales & profit data)
  - CurrentRetailPriceEach (can determined discounting)

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(1) Use of data has been approved.

The Hypotheses

- The sales performance of a signature product (like Herman Miller's Eames Lounge chair all variants) can predict the success of a store [1]

- Stores in cities with multiple locations perform better than cities with only one location [1]

- Multi-sku orders predict the success of a store [1] and in general a signature product drives those orders

- A higher prevalence of discounts makes a store more successful and more profitable (relative to the fleet)

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(1) Success of a store to be judged based on its relative comp store sales to the entire fleet.