



WHITEPAPER

Retail Data Science for Consumer Businesses

Shelf Truths That Influence Sales

Merchandizing and store execution decisions are often based on intuition and anecdotal evidence or, at best, on sample-based survey audits, leading to lost sales opportunities. Consumer businesses can significantly improve topline growth by leveraging data science and analytical models to understand intricate relations between shelf conditions and sales.



CPG companies are increasingly using big data and analytics as prominent levers, as they seek to move the needle through informed decisions across different organizational functions and process areas.

However, these decision-making models are yet to percolate into many areas, often due to two reasons:



Insight collection techniques are still too traditional, and do not lend themselves well to generating timely, actionable insights

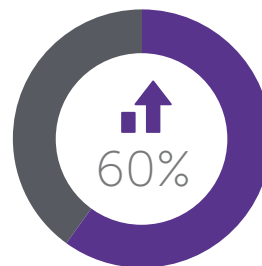


Analytical models are not dynamic and granular enough to rapidly make decisions with precision

One such area relates to in-store merchandizing and execution. Product lifecycles have shortened, and retail shelf space is more limited than ever. Yet, many brands lack the visibility of how their products perform in the store. Key performance indicators like stockouts, on-shelf availability, shelf share and planogram compliance are monitored mostly through traditional physical audit methods.

Newer, more effective techniques like digital image recognition technology are bringing unprecedented sophistication to how CPG companies keep track of their products on retailer shelves. When done well, this technique increases sales rep productivity by 60%¹, allows for greater store coverage and discovery of opportunities that would not otherwise manifest themselves.

CPGs using image recognition to capture store data see up to 60% increase in sales productivity



Now, companies are going even further. By combining shelf analytics generated via image recognition with sales data, they have uncovered a system of insight that was never available to them before.

Sales analysis in the context of in-store metrics like product facings, assortment, competitor adjacencies and promotions is enabling a truly panoramic and granular view of the business environment that is unlocking new commercial advantages and competitive differentiation.

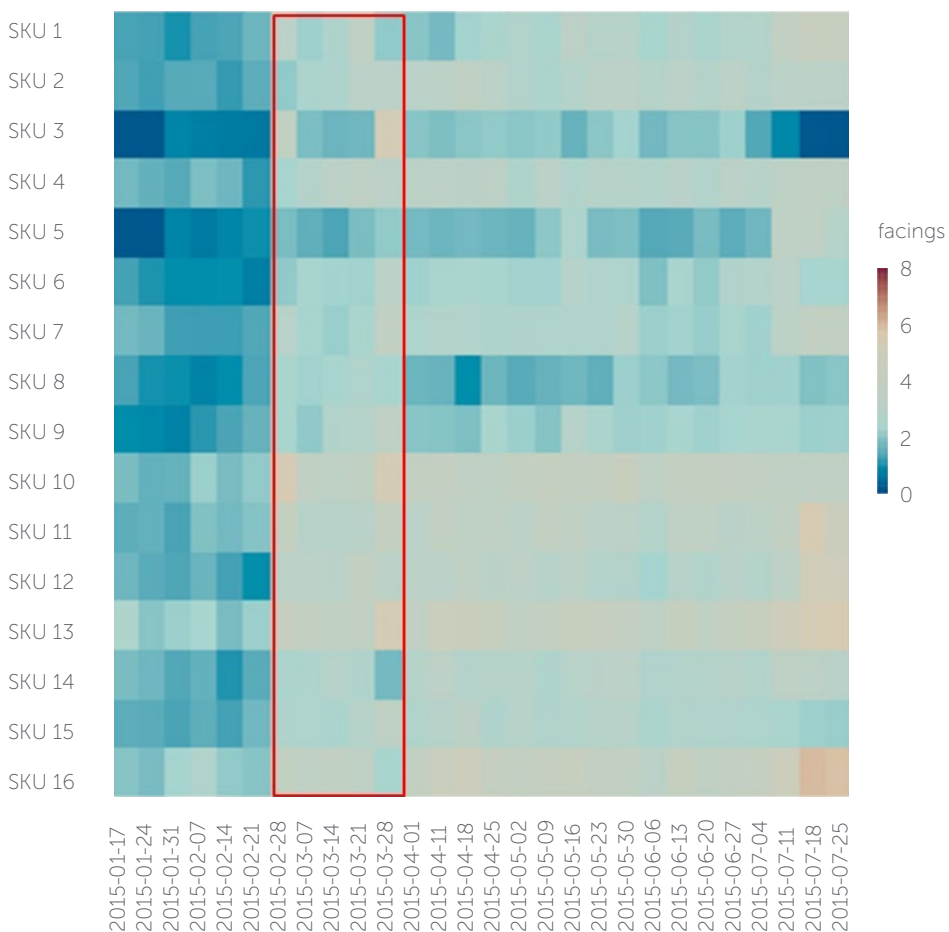


A leading global consumer products manufacturer executed an aggressive distribution push of one of its key products at a large retail chain. Accordingly, a significant increase was noticed in the number of product facings in the stores, particularly for SKU 10 and SKU 13.

At first, sales took off, revenues grew pleasingly, and the facings blitz was seen as a smart move. But after a while, stagnation set in and sales plateaued. Alarmed, managers tried to discover what happened.

Exhibit 1 | Facings Density: Dramatic Increase of Facings in Large Retail Chains

Product facings are indicated as increasing from light shades of blue to bright red.



Trax Retail Advisory: Consultative shelf analytics powered by image recognition

In search of answers, the manufacturer consulted Trax to get to the root of the problem, and specifically get insights on in-store reality causing the rise and fall in sales volumes.

The client leveraged Trax Retail Advisory, a consultative analytics service that delivers tailored strategies for consumer goods companies to optimize in-store execution and accelerate brand and category growth. The service combines Trax in-store execution data with sales and purchasing behavior data sources to provide actionable recommendations. This platform is based on image recognition algorithms that convert shelf images into actionable intelligence.

Trax analysis was based on 12 months of extensive Trax shelf data and manufacturer EPOS data.

The manufacturer was able to distil the analysis down to key factors that influenced sales in the store:

Shelf Management Factors that Influence Sales

Internal Dynamics

External Influencers



Position on Shelf

- Are new facings at eye-level?
- Among the shelves in the bull's eye zone, which placement level has the most sales potential?



Shelf Assortment

- Does the shelf have adequate facings of products with the highest sales potential?
- Is the assortment guaranteed to be fast-selling for this particular store?



Competitor Adjacency

- Which competitor brands are around my products?
- How do they affect my sales?



Competitor Price and Promotions

- What is the current price and promotion landscape on shelf?
- How do my competitors respond to my promotions?

Position on Shelf

Brands are constantly challenged to justify the significant costs of securing premium eye-level shelf space for their products in the store. They need the ability to understand how their own shelf positions as well as key competitor placements influence incremental lift in sales.

Trax processed mammoth amounts of data from a variety of sources and deployed sophisticated modeling to decipher the correlation between facings of the various SKUs in the category, their positions of the shelf, and corresponding impact on sales.

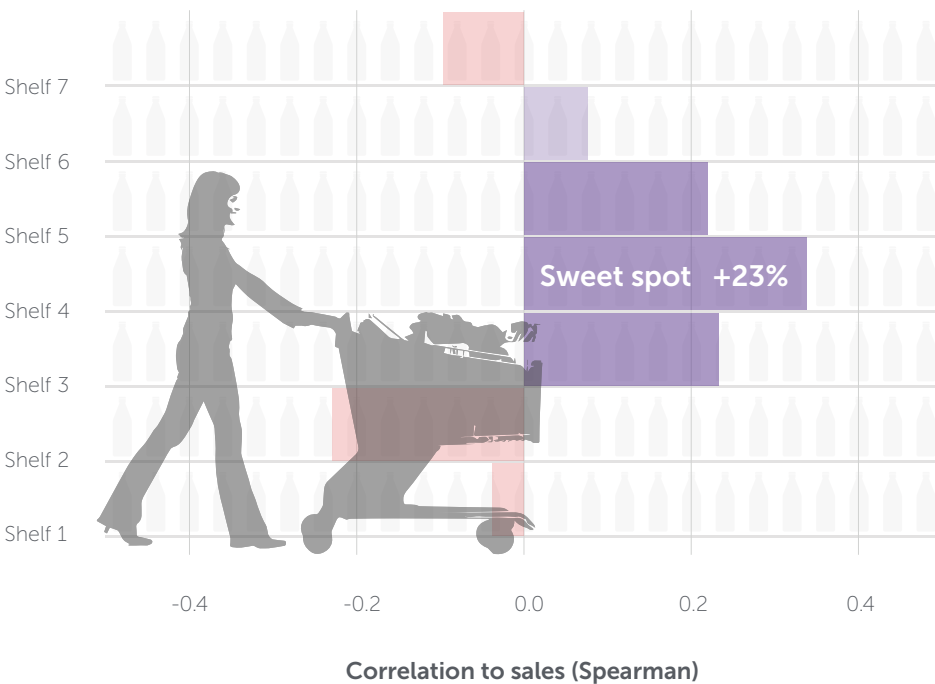
With Trax, the manufacturer understood the quantifiable effects of increasing facings on optimal shelf positions and what that would mean to their sales. For example, Shelf 4 had 23% greater potential to increase sales, compared to Shelf 3 or Shelf 5 – despite all three shelves being in the eye-zone. Items placed on Shelf 2 suffered a 25% fall in sales upon continued placement in this position.



Shelf 4 had 23% greater potential to increase sales, compared to Shelf 3 or Shelf 5 – despite all three shelves being in the eye-zone.

Exhibit 2 | The Quantifiable Benefit of Placing Products in the Eye-Zone

Statistical analysis of sales performance of products placed in different shelf positions



Trax impact

1. Better returns on space: The client was able to ascertain the ROI of eye-level space investments by directly comparing costs with sales uplifts
2. Improved collaboration with retailer: This quantifiable outcome helped facilitate a more meaningful dialogue with the retailer, and agree on an optimal shelf arrangement that boosted overall category growth, shopper spend and basket size.
3. Trustworthy data: The client also regained data objectivity by verifying these trends with actual shelf images.

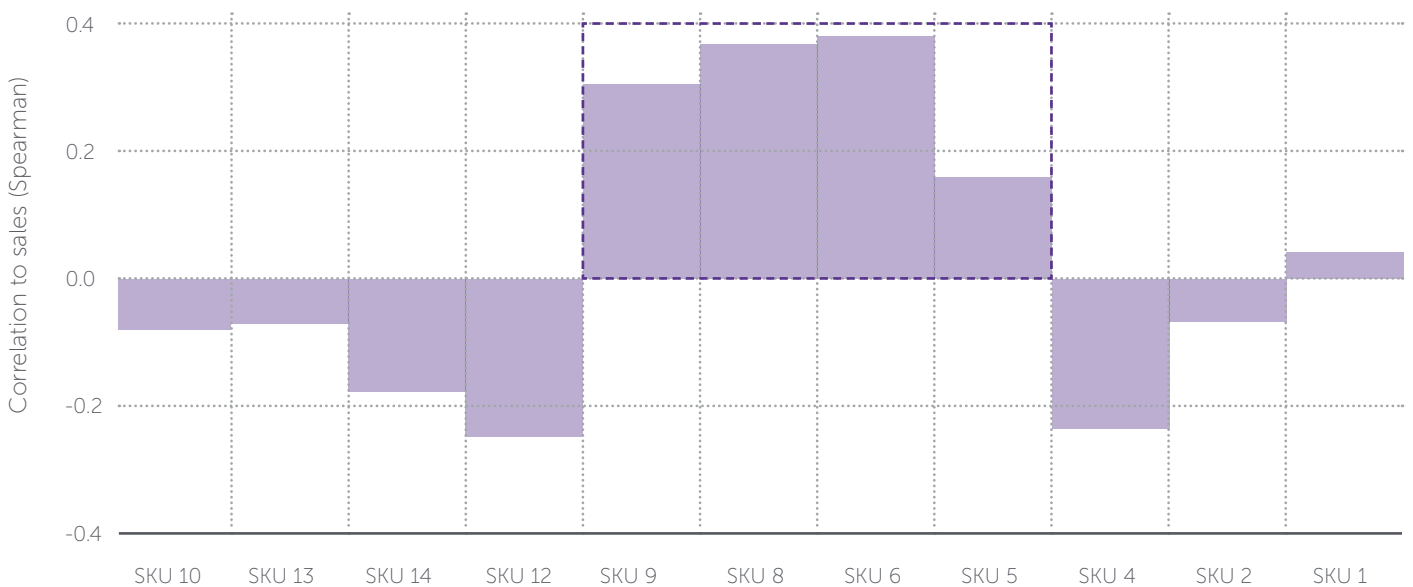


Shelf Assortment

Assortment optimization has long been a difficult problem for brands, especially in the face of increasing pressure to deliver growth in every SKU. Moreover, shifting demographics mean that category managers need to have merchandizing strategies to serve different shopper segments. This trade-off becomes even complex when they don't have the right data. Shipment data and syndicated transaction logs can only answer what products sell how much, but do not take into account how visible inventory influences sales in the store.

Exhibit 3 | Some SKUs Have Greater Sales Velocity than Others

Facings-to-sales correlation analysis of different SKUs in the assortment



Trax impact

The ability to view product facings in relation to sales enabled the client to have the right items on the shelf - not too few, not too many - and in turn improve category health.

Competitor Adjacency

Most consumer product companies often have a strong understanding of their competitors across various categories. Drilling down to the store and shelf level, however, things get murkier. Traditional approaches of control store tests or store clustering by number of brands on shelves do not provide the level of sophistication to truly decipher the one-to-many relationships between brands.

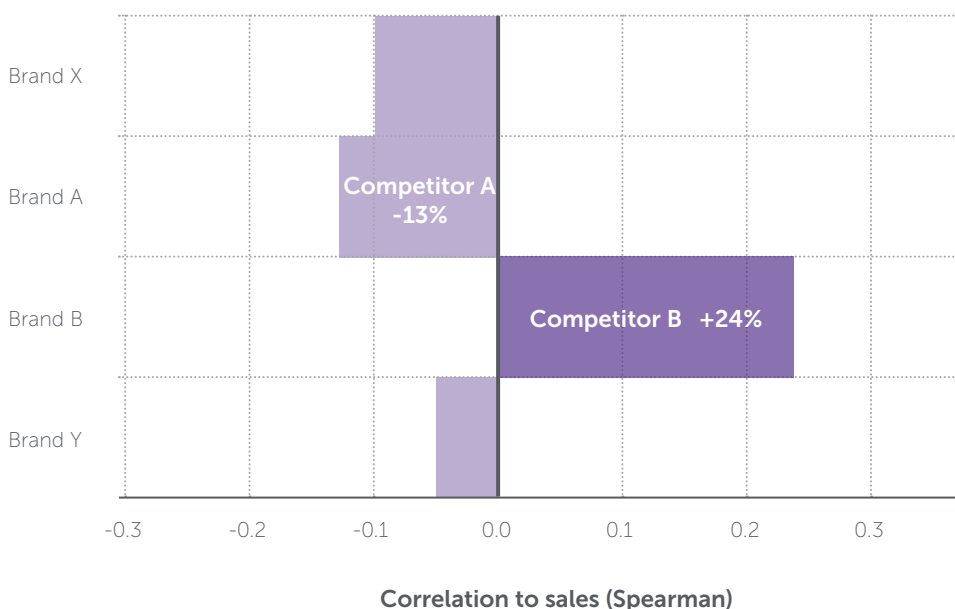
With Trax, the client was able to confirm some long-held beliefs, but also discover some surprising new insights. For example, the client learned that increased facings of Competitor A's products negatively impacted its sales. However, when higher-priced Competitor B's facings were increased on shelves, the client's own sales went up by 24%! This could mean that, although higher priced, Competitor B's products were perceived to be of the same quality as the client's products.



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Exhibit 4 | Consumer Perception of Neighboring Brands Influence Sales

Impact of increasing competitor facings on sales



Trax impact

1. The client was able gain deeper insight on exactly which brands are their "friends" and "foes" and how their shelf positions impact their sales
2. They also gained the ability to create a leverage through proximity with their biggest competitors and optimize their shelf strategies in the store.

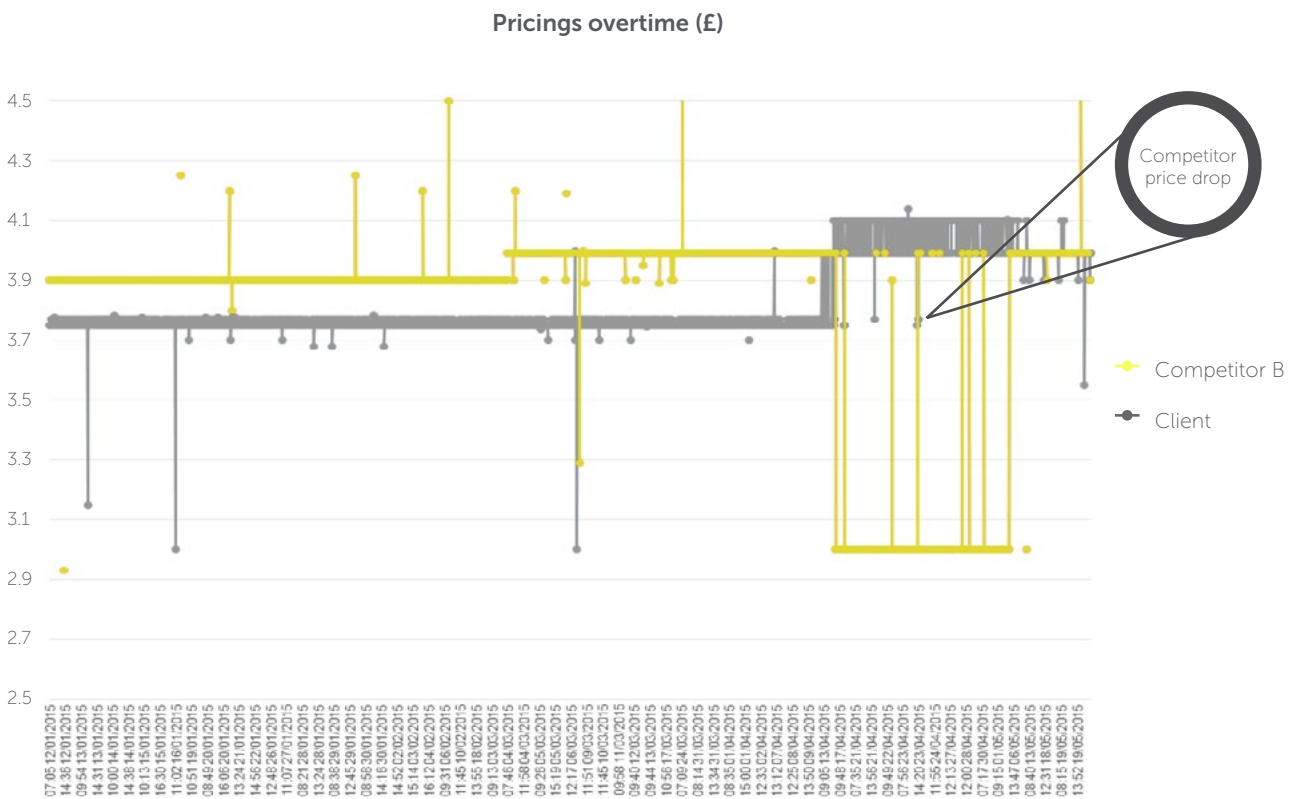
Competitor Price and Promotion

Price and promotions are two of the important elements of consumer brands' marketing mix that directly impact profitability. However, the sheer volume of price changes and new promotional activities in modern retail environments makes it hard for brands to monitor their own execution, let alone understand how competitor activities are affecting them in the aisles.

Trax shelf data showed that the client's products were on average 10% cheaper than those of Competitor B. At regular prices, sales of the client's products were higher. However, the competitor appeared to have observed this trend. Trax data revealed that they strategically slashed down prices when the client increased theirs, driving down client sales during this period.

Exhibit 5 | Competitor Response to Price Stimulus Affects Sales

Price comparison of client's products and Competitor B's products over time



Trax impact

1. The ability to gain visibility of various price points in stores, right down to the SKU level allowed the manufacturer to secure an integrated view of the overall category pack price architecture.
2. Monitoring competitor price promotions in real-time allows brands to be nimble and adjust their own pricing strategies in a way that resonates better with shoppers.

Conclusion

There's a revolution happening in retail and consumer goods industries. Big data is increasingly becoming mainstream. Real-time shelf analytics, made possible by digital image processing technology, is ringing up the curtain on exactly what happens between the back room and the cash counter of retail stores – at a scale never imagined before. By juxtaposing this new breed of insight with sales and other performance metrics, executives have the opportunity to unlock growth and usurp competition.

What's Next?

If you want to truly understand what's driving your sales and uncover new growth levers, the team at Trax can help.

To learn more or request a consultation, visit:

<https://traxretail.com/contact/>

About Trax

Trax is the world leader in computer vision solutions for retail, ranking in the top 25 Fastest Growing Companies on Deloitte's Technology Fast 500 list. The company enables tighter execution controls in-store and the ability to leverage competitive insights through their in-store execution tools, market measurement services and data science to unlock revenue opportunities at all points of sale. Trax does this using smartphones and tablets to gain actionable shelf analytics in real-time. With over 175 clients, in over 50 countries, top brands such as Coca-Cola, AB InBev, Nestle, Henkel, PepsiCo and many more, leverage Trax globally to manage their in-store execution and increase revenues at the shelf. Trax is headquartered in Singapore with offices worldwide. To learn more about Trax, please visit www.traxretail.com.

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