

Price Optimization for Brick and Mortar

Automated Pricing Decisions by Blue Yonder

Blue Yonder Price Optimization for store-based retailers tests and measures interactions between price and demand changes for every store to automatically set revenue- and profit-maximizing prices for different stages in the product life cycle, including markdown. Using current and historical sales data, product master data and continuous optimization and testing, it goes beyond simple competitive and rule-based pricing, allowing hundreds of prices to be optimized every day. Because it considers both the cost and effect of every price change, it can limit them to the most relevant for a given day.

Price Optimization is a software as a service (SaaS) solution built on the Blue Yonder Platform and can be integrated into an ERP system using standardized APIs.

Dynamic Pricing

Pricing is the core strategic component affecting company profitability. On average, a 1% change in price leads to a 10% change in profitability, and the smaller the company's margins, the more pronounced the effect. But many companies still lack the tools to approach pricing strategically and scientifically and instead rely on a number of rules or policies that have the wrong approach and no scientific basis:

1. **Cost plus pricing** – considers margins, but not optimal growth or customers' willingness to pay
2. **Competition minus pricing** – leads to evaporating profits and sparks a race to the bottom
3. **Odd pricing (99 cents)** – is based on outdated assumptions about consumer purchasing behavior

The key determiner for prices is the customer's willingness to pay. This is influenced by a number of factors such as the product name, brand, related products in the same store, competitive products, location of the store, presentation in the store, time of the day and day of the week. An ideal pricing strategy considers all of these factors and is based on scientifically validated hypotheses.

Price Optimization works for all phases of the product life cycle, from introduction to markdown sales. With Price Optimization, Blue Yonder customers typically see increases in revenue and margins of more than 5% (and up to 15%).

Key benefits

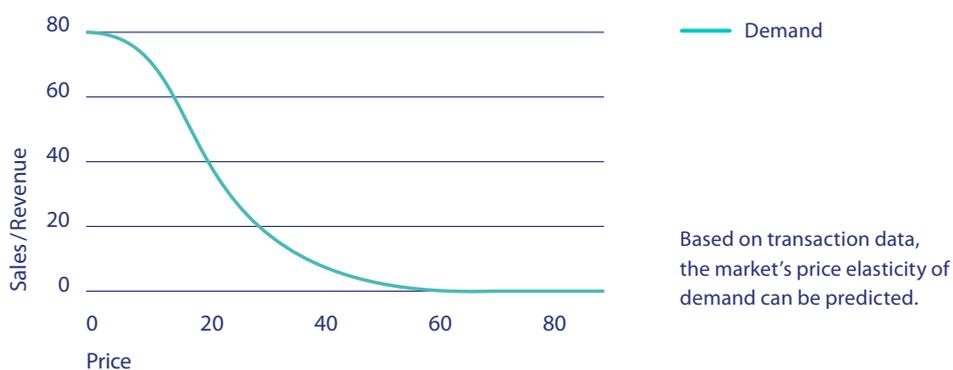
- Increased revenue and margins – more than 5%
- Reduced stock level by 20% during markdown optimization
- Constant price updates based on the latest information – prices follow market trends
- Considers cost of price changes – every price change yields a net profit increase
- Price Optimization for both normal seasonal sales and markdown sales
- Low maintenance after initial setup – considerably reduces time spent on price management

Features

Price elasticity determination

Blue Yonder Price Optimization systematically tests different price points for a given product and store combination and determines the resulting changes in demand. It then calculates the price elasticity of demand for each product based on various price and quantity pairs. Even for slow-selling goods, the price elasticity can be determined using cluster and aggregation algorithms to evaluate their describing features.

With this information, the in-store price for a product can be optimized according to the customer's desired pricing strategy. After a short learning period, it sets the optimal price for each product in each location, ensuring that the company's price implementation matches its overall strategy.



Revenue-maximizing pricing strategy

As the name suggests, this strategy sets the price so that the overall revenue for the product is maximized. It automatically detects the point where the effects of decreasing price offsets the effect of growing sales and revenue is no longer increased.

Although it achieves the fastest possible sales, the revenue-optimizing price might be unprofitable for the company. It works best for growth companies and new product introductions where capturing market share is the primary goal.

Profit-maximizing pricing strategy

Profit-maximizing sets the price so that the overall profit margin for the product is maximized, taking into account the cost of merchandise, not just the revenue that can be achieved.

This strategy optimizes for maximum profit – which could also include price increases or significant changes compared to competitive prices. It is most beneficial to established companies and existing product ranges, and delivers the fastest return on investment.

Stock-based pricing strategy

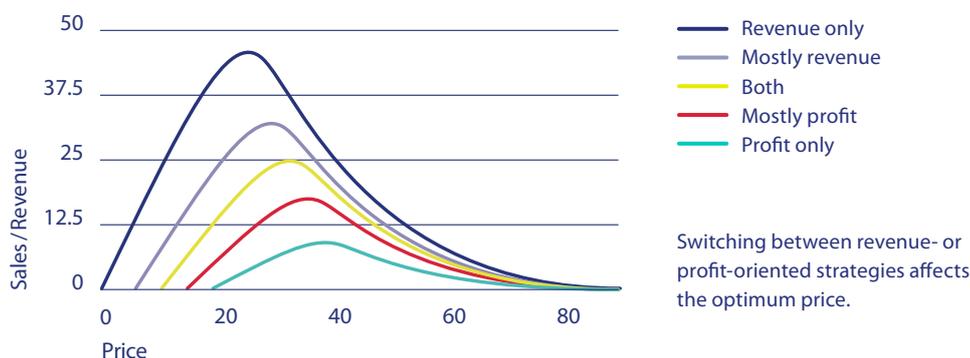
The stock-based pricing strategy can be used for products at the end of the product life cycle. It considers available stocks, price elasticity and forecasted demand until the end of the season or product life cycle. Using this information, Price Optimization sets the optimal price so that reductions happen as slowly as possible, while still ensuring that no leftover stocks remain at the end of the product life cycle. The optimization considers inventory level in each store location, allowing markdowns to be based on sales performance in each store.

This strategy performs profit-oriented markdown management and works best for leftover stocks of special promotions or products that become obsolete due to technology life cycles.

Price strategy mix

The price strategy mix strikes a balance between revenue and profit optimization. Depending on their individual goals, customers can define the percentage by which revenue should be optimized over profit.

It is possible to set a mix that accurately reflects the company strategy. If the customer focus is growth, setting the target to revenue will yield optimum results. If profit maximization is required, profit optimization is the ideal approach. But even in growth-oriented companies, the cost of capital can be a concern, so that mixing strategies may prove to be most useful.



Pricing rules

Blue Yonder Price Optimization allows pricing rules to be set. All product prices within these rule sets are optimized according to their underlying constraints. Pricing rules allow constraints to be set on an individual product, between products (for instance, the smaller size of a product should always cost less than the larger size) and even across entire product groups (for instance, to enforce an average price). They also allow price conformity across store locations. The optimization is performed within the boundary parameters given by the pricing rules.

Pricing rules, such as minimum or maximum prices, or 99-cent pricing can be implemented to ensure consistency. However, it is important to note that enforcing too many predefined pricing rules can constrain the optimization and lead to reduced revenue or profit gains.

Marketplace monitoring

An important aspect to consider when setting prices is the price structure of the overall marketplace. Price Optimization takes into account competitive prices (provided by the customer), as well as substitution and cannibalization effects between products to determine at what price customers decide to switch to a slightly different product, or even to a competitor.

This 360-degree view of the market ecosystem means that retailers automatically end up with a price strategy that is competitive, but still profitable and avoids the price wars and races to the bottom often caused by repricing tools. By monitoring the entire assortment for substitution and cannibalization effects, it also ensures that the success of one item is not at the expense of another.

Cost of re-pricing

Every price change takes time to implement and incurs costs in terms of printing labels and price tags, plus the labor needed to apply them. Even though Price Optimization can optimize prices for tens of thousands of products across thousands of store locations, it pools price changes to reduce their frequency so that they are only applied if they are profitable.

The cost of price changes can be submitted using our API, so that variations between product categories and stores that have electronic shelf labels, paper shelf labels and individual price tags can be understood, leading to fewer price changes in cases where these changes are costly.

Supply & Demand REST API

The API allows the delivery of master data and sales data to Blue Yonder Price Optimization using a simple and secure combination of XML and HTTPS. All uploads are checked for validity and consistency prior to booking.

Data can be delivered from any ERP or POS system, database or technology platform, even homegrown solutions. Thanks to the built-in HTTPS encryption, no data can be accessed by other applications. Since Blue Yonder uses a standardized API for its solutions Replenishment Optimization and Price Optimization, existing integrations can be re-used for customers who are using these products.

A/B testing

If required, Blue Yonder can perform a randomized A/B test for a customer. This involves controlling prices for only a subset of the inventory, allowing a comparison between optimized and non-optimized pricing strategies. However, this A/B test requires additional consulting and reduces the overall positive effect of Price Optimization for the duration of the trial.

Facts

Blue Yonder Price Optimization is the right choice for brick and mortar retailers looking to achieve their strategic goals, such as revenue growth, profit increase, end-of season markdown management or a combination of all three, by implementing a dynamic, market-driven pricing, reflecting real customer demand. As a software as a service, Price Optimization can be easily and securely integrated into existing ERP and POS systems.

To achieve optimal results, some key customer data is required. The implementation and integration will be performed by Blue Yonder or its implementation partners. In addition, Blue Yonder provides further services and support, including strategy setting, implementation of custom rules and data quality checks.

Link Data

ERP master and POS transaction data is sent to Blue Yonder's Supply & Demand REST API via XML and HTTPS. Data exchange is secure and automated.

The following key data points are required:

- **Product data:** product name, product SKU, original product price, cost of product, product group, time range for product availability
- **Product group data:** product group, parent product group
- **Product attributes:** as key-value pairs
- **Transactions:** product, quantity, sales price, timestamp
- **Availability:** product, retail location, availability status, current price
- **Location:** store address, store sales area, store type

Automated Optimization

Price proposals will be provided daily for each product and each retail store it is being offered at. Proposals can be retrieved by the ERP system using a standardized API.

UI Views

- Data monitoring
- Data delivery protocol
- Price-change report

Service & Security

- Service desk handles questions and requests
- Data scientist consulting (optional)
- Security and user management
- Blue Yonder handles hardware and updates
- Daily backups on specially designed servers for quick recovery
- Critical components tested periodically for network vulnerability

Implementation & Integration

Blue Yonder Price Optimization is offered including an implementation project conducted by Blue Yonder's team of data scientists. This implementation project typically includes:

- Qualification
- Pre-analysis based on historical sales data
- Concept development, including integration architecture
- Implementation and integration
- A/B testing (if required)
- Model tuning
- Rollout

Would you like to optimize your pricing? Get in touch!

Blue Yonder GmbH
Ohiostraße 8
76149 Karlsruhe
Germany
+49 721 383117 77

Blue Yonder Software Limited
19 Eastbourne Terrace
London, W2 6LG
United Kingdom
+44 20 3626 0360

Blue Yonder Analytics, Inc.
5048 Tennyson Parkway, Suite 250
Plano, Texas 75024
USA

info@blue-yonder.com
blue-yonder.com

BlueYonder
Best decisions, delivered daily