competera

Price Optimization Overview

White Paper

Artificial Intelligence Helps Break Revenue Ceilings

Mature retailers have reached the revenue ceiling, which is hard to break by using traditional methods. Artificial Intelligence (AI) and its core element Machine Learning (ML) are gaining momentum as a revolutionary means to bring retailers to the next level of revenue generation.

According to recent Juniper research, by 2022, retail businesses **will be spending some $7.3 billion yearly on AI, up from $2 billion in 2018.**

This paper briefly outlines how retailers can use AI along with other approaches to offer optimal prices and boost profits.

Industry Challenges

64%

amazon

The power in the market is shifting from sellers to buyers, say recent studies by Deloitte and PwC. Therefore, it is becoming incredibly important for retailers to build a frictionless customer experience to differentiate from competitors and retain customers. Being at the core of successful customer experience, the price of a product is what makes consumers shop at a particular retailer, states Global Consumer Insights Survey 2018 by PwC.

The price of a product is what makes consumers shop at a particular retailer

Retail giants like Amazon leverage the power of machine learning to build the right price perception among customers. According to the report "How to win in the Amazon era" by Epsilon, as many as 64% of respondents cited price as their primary motivation to shop on Amazon.

Industry Challenges

Meanwhile, it is challenging to find a balance when setting prices, even for advanced retailers. Too low prices send companies bankrupt. Too high prices repel shoppers and, as a result, cut sales. For example, a study by Retail Systems Research states that consumers would rather care about a "fair price" than a "lower price." Therefore, optimal prices are a must. A core aspect of rewarding customer experience, they are rapidly becoming rocket science even for advanced retailers.

Retail businesses effortlessly reach KPIs which can be categorized as "the higher the better," e.g. revenue or profit, and "the lower the better," e.g. costs. These are easy to target and convert into tactics. However, when it comes to "optimal values," such as prices, retailers find it difficult to calculate balanced prices for the whole product portfolio in real time.

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At Competera, we see two major barriers which prevent retailers from setting optimal prices:

The impermeability of the future

There is no ground truth in retailers' pricing actions. It is impossible to say whether the action was right or wrong because the reaction of sales is very hard to measure. It is difficult because the reaction of demand to price changes is:

- Non-linear;

- Multi-factor (it covers not only absolute price points but also relative factors);

- Delayed (since customers shop with a certain frequency, they have shopping cycles and get exposed to new prices with a delay);

- Heavily biased by other factors like seasonality, distribution, advertisement, and competitive actions, etc.

A very wide product range

By changing the price of a certain product, retailers impact the sales of dozens of other products. Also, large-scale companies need to reprice thousands of products every week, or sometimes daily, which makes the calculations of individual price elasticity for human managers almost impossible.

Available Approaches

Currently, retailers can benefit from three main methods to enhance pricing:

	In-house solutions	**Consultancy**	**Technological partnership with AI-provider**
Flexibility	Designed for a specific goal, such solutions have no product development team that can help the system evolve along with the needs of the retailer	Hired consultancy teams provide one-time reports per specific requests	The solution evolves along with the needs and goals of the retailer of any size
Scalability	Scaling up internal systems is time-consuming and requires heavy investment. Also, the retailer's pricing department should align their plans with the IT department to deploy the system across a wider range of products	Such a solution is not scalable. Everything from adding new products to changing a pricing strategy requires the retailer's financial and human resources or additional consultancy funding	A technological partner has all the necessary resources and infrastructure on their side, which brings the involvement of the retailer to a minimum.
Accuracy	In-house solutions are often designed for rule-based pricing and rarely tap into demand predictions	Such reports provide long-term predictions and recommendations rather than short-term ones	AI algorithms are trained and optimized constantly, which helps make short-term predictions more accurate

Available Approaches

Trustworthiness	Such a pricing system requires an additional internal data management system to keep data confidential	Hiring a reputable consultancy company is safe, although it requires transferring data to a third-party	Such a partnership ensures data security thanks to Google cloud's separate accounts for data storage
Human resources	An internal pricing system requires the capacity of two departments: • IT department. The team usually has its own KPIs, therefore, its capacity for the pricing system is always low. • Pricing department. Depending on how sophisticated the in-house solution, pricing managers can still be required to analyze how the prices are crafted and what factors influence them.	The consultancy also requires the capacity of two departments: • IT department. The team needs to be involved in the cooperation with the consultancy company. • Pricing department. Category and pricing managers are still overloaded with manual tasks.	With a technological partner, the retailer's IT department can focus on other technological needs of the company, while the pricing department can concentrate on such strategic tasks as crafting a balanced pricing strategy or negotiations with suppliers
Cost efficiency	Deploying and maintaining an internal pricing system requires no less than $50,000 per month to support an in-house team of at least ten professionals (data scientists and developers)	Hiring a consultancy team costs no less than $2 million	A technological partnership entails an ROI-based pricing model

Competera Is Your Technological Partner

Amazon, Walmart, and other big names rule the world of retail. They gain a competitive edge by pumping billions of dollars into R&D; for example, Amazon invested some $22.6 billion in 2017**.**

Furthermore, retail giants also invest heavily in marketing and promotional efforts. Competing with them by using traditional methods is not an option in a highly intensive and dynamic market. Meanwhile, a technological partnership can put retailers in a position to fight for and increase their market share.

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$22.6 billion in R&D in 2017**

What Makes Competera Different

Here is what sets Competera apart from competitors:

- highly accurate **(up to 98%)** demand predictions

- **2-5%** margin growth, up to **15%** sales growth

- optimal prices at any level — by product portfolio, store, region or country

- real-time analytics for immediate or long-term changes in a pricing strategy

- a sandbox for testing promo scenarios on the fly

- a database for the results of all the bad and good pricing and promo experiments

- rapid scaling to match the needs of a retailer of any size

- evolving along with the needs and goals of the retailer

How It Works

At Competera, we use a two-stage machine learning approach. The first stage is a perfect fit for precise calculation of the effect of price changes on sales. The second stage is state-of-the-art math price optimization which uses the results of the first stage to recommend prices for the whole assortment to reach the retailer's business goals.

Sometimes retail managers hesitate to apply seemingly counterintuitive price recommendations of the AI algorithm. Humans see the algorithms as a black box, the logic of which they cannot debug and understand.

What if the system would recommend cutting prices by 50% or even 90%? Should such recommendations be taken into account and applied? When in doubt, the answer is to use the "sandbox" option to test every pricing scenario and see its results in real time. Another step would be to set constraints to keep the highly accurate system within necessary limits.

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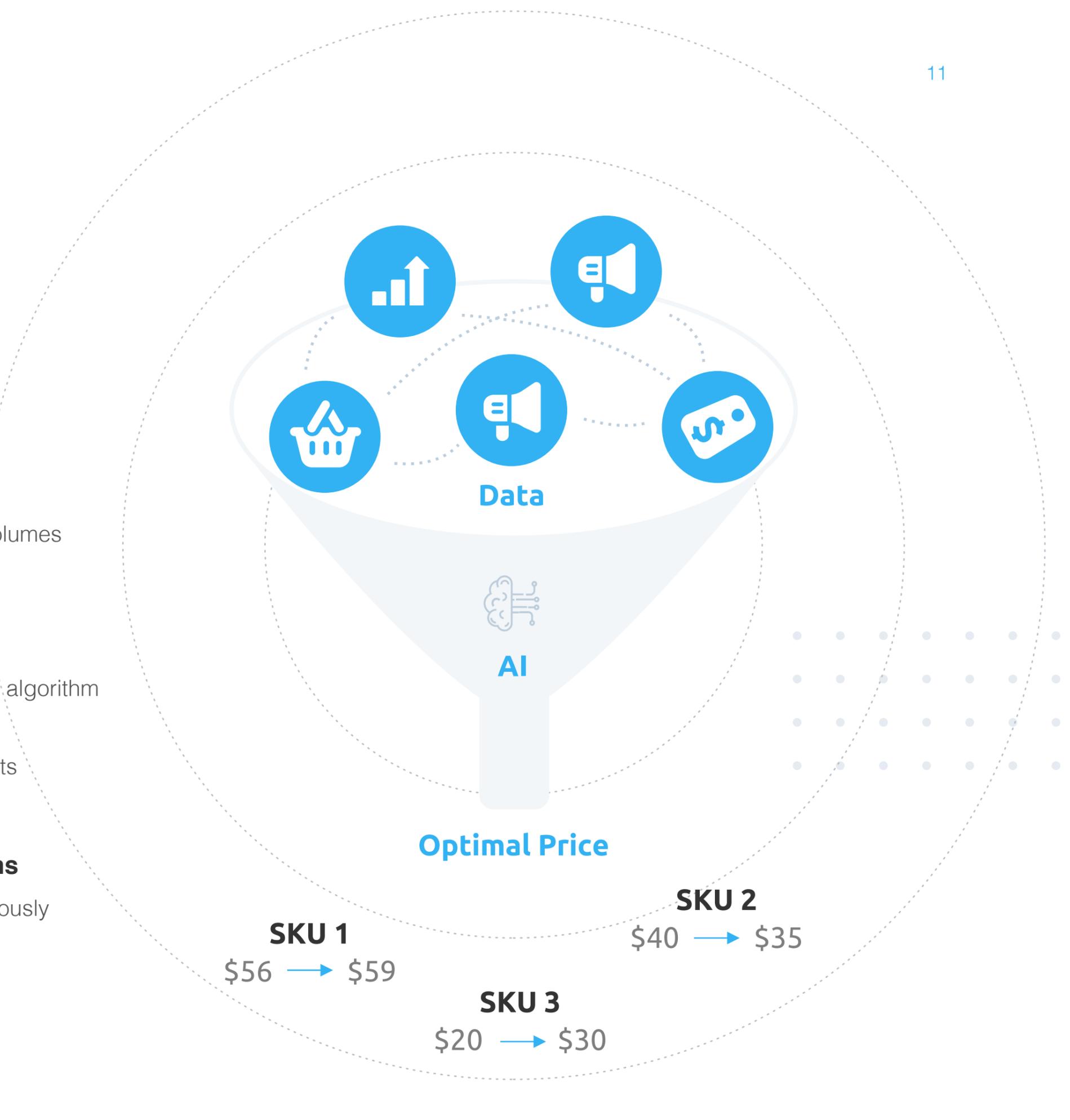
How It Works

1 **Collect and structure historical data spanning no less than two years**

- Sales transactions
- Stock
- Assortment
- Repricing activities

2 **Indicate business goals**

Choose a repricing model to increase sales volumes or revenue.

3 **Define business constraints**

To control the repricing outcomes, provide the algorithm with a number of necessary business rules — from the maximum number of repriced products to costs and the MAP.

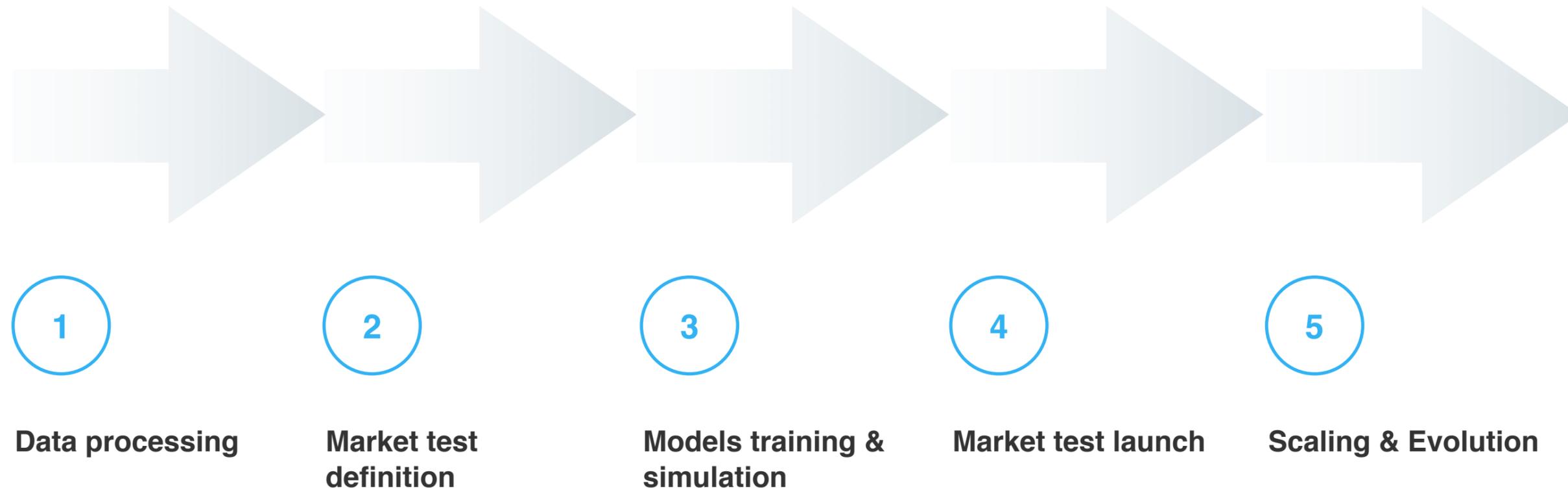**4** **Receive optimal price recommendations**

Apply the recommended prices to reach previously indicated business goals.

Data

AI

Optimal Price

SKU 1
$56 → $59

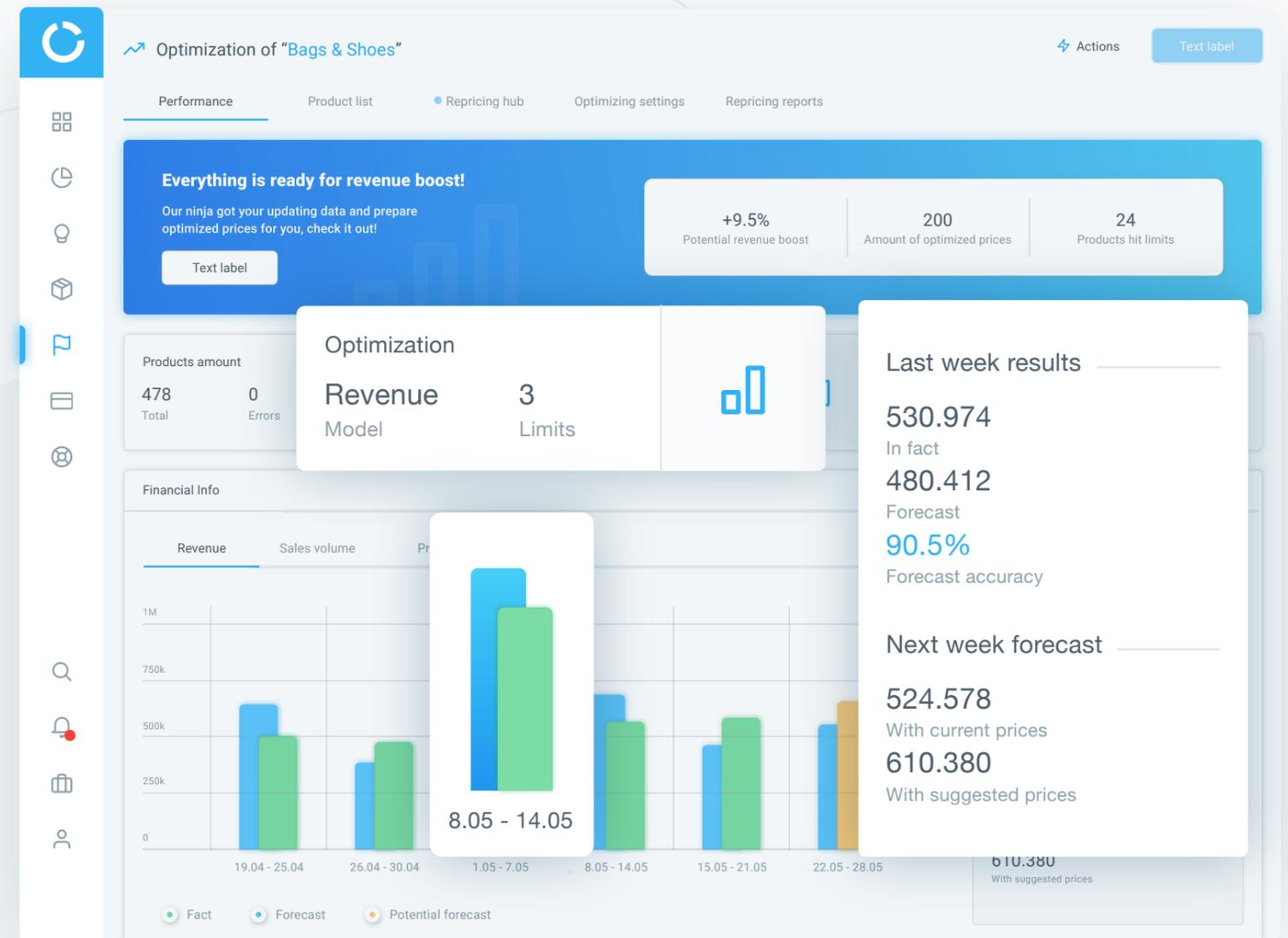**SKU 2**
$40 → $35

SKU 3
$20 → $30

Buyer's Journey With Competera

To make every product contribute to revenue generation, retailers need to take the following steps when partnering with Competera:

1

2

3

4

5

Data processing

Market test definition

Models training & simulation

Market test launch

Scaling & Evolution

Run a 60-day market test

Companies do not have to take our word for granted. They can always check our efficacy with the help of a market test.

TEST

How Competera Solves Real-world Retail Pricing Problems

Sell stock

Actions

Change prices optimally while taking into account the profit margin of the whole product portfolio.

Results

- Loyal customers are focused on high-margin products.
- The profitability of the whole product portfolio remains unchanged.

React to the rise of purchasing prices

Actions

Apply a differentiated approach to pricing. Run several repricing cycles with uneven price ranges to reach KPIs gradually.

Results

- Retained profitability for the whole product portfolio.
- Revenue is kept unchanged.

Boost sales of fast moving products

Actions

Leave as it is or raise prices for a part of the assortment to improve the price perception of chosen products.

Results

- Fast-moving products generate revenue steadily.

Define the price positioning for new entries

Actions

Identify latent clusters of similar products, and assign new entries to the most affinitive clusters.

Results

New products have optimal prices.

Case Study

Foxtrot, an omnichannel Eastern European retailer with $500 million in annual turnover, wanted to stop copying competitors' pricing moves and maximize revenue without risking profit margins.
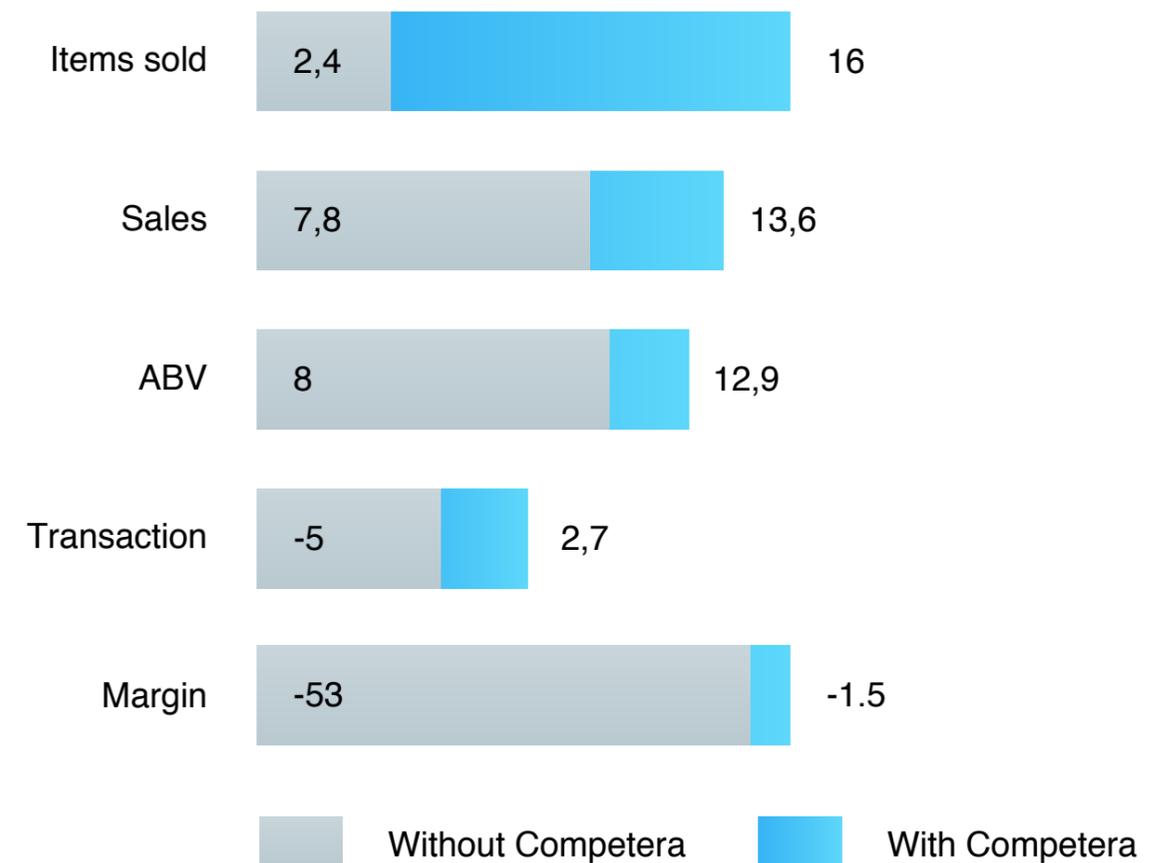
LEARN MORE

The pilot, which involved a test and a control group, had three goals:

1 To maximize revenue without losing margin;

2 To stop mimicking the moves of competitors;

3 To show the feasibility of Competera's solution.

Solution
Competera suggested switching from expert-based pricing to using state-of-the art machine learning algorithms as part of the pilot to optimize pricing based on the retailer's business needs.

**The results
of a 30-day market test:**

	Without Competera	With Competera
Items sold	2,4	16
Sales	7,8	13,6
ABV	8	12,9
Transaction	-5	2,7
Margin	-53	-1.5

Contact Us

Check whether Competera Price Optimization solution can boost your profit margins by 5% & sales by 15%

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If you still have any questions regarding this e-book,

or any of the described strategies, do not hesitate to contact us.