EVIDEN

Eviden Dynamic Pricing

VAIS / DataSentics

an atos business

EVIDEN

Topics for today

01
Solution

02
Commercial offering

03
Engagement model

04
References

05
Accelerators

Eviden Vertical AI Solutions (VAIS)

Real Impact AI Solutions for Enterprises

Vertical AI CoE
200+ data scientists and ML/data engineers in CoE in Europe and US

Eviden
57.000+ digital transformation, cloud, and data experts

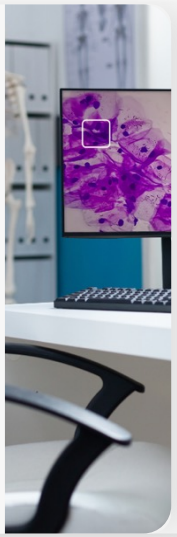
15+
Solutions & Value Accelerators

What We Do:

Data AI Industry Use Cases and Accelerators

Key Industries:

- Manufacturing
- Financial Services
- Retail & CPG
- Life Sciences
- Energy & Utilities



Building Modern Data+AI Products and Platforms

Focusing on:

- MLOps
- Generative AI
- Computer Vision labs
- Databricks implementations
- AI product development

Eviden Vertical AI Team
Innovative AI Startup history

Partners:

databricks aws Google Cloud Azure

Selected Customers:

sanofi Coca-Cola HBC ERSTE Group L'ORÉAL BAYER

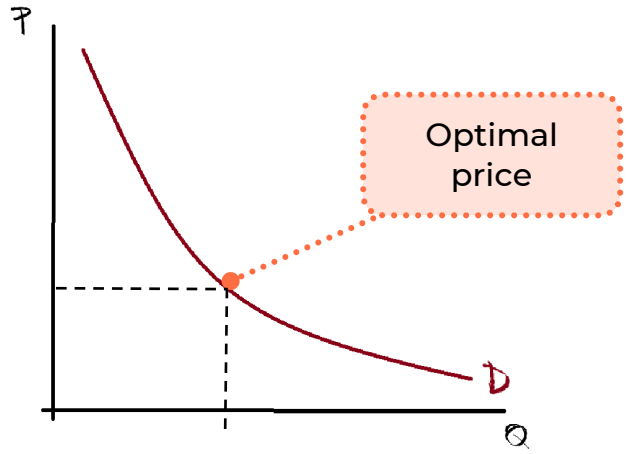
EVIDEN

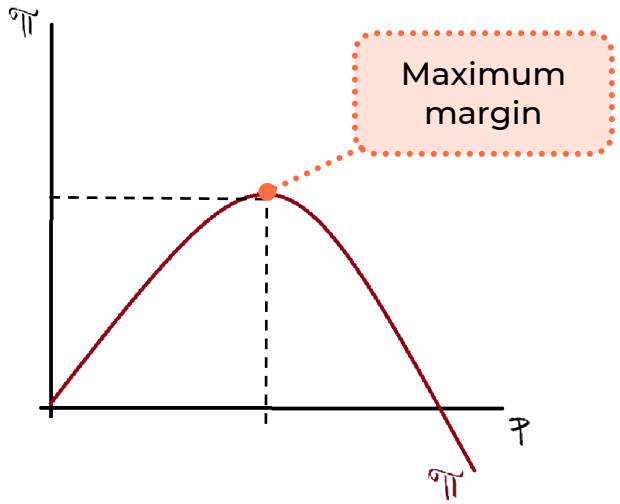
EVIDEN

01. Solution

Pricing in retail

“What price should we set to reach maximum margin?”





Key challenges in pricing:

- Ensuring the price is truly **optimal**
- **High number of factors** influencing customer demand
- Pricing of **substitute** or complementary products
- Existence of **competition**
- Timely reaction to **changes** in demand
- **Real-time** product pricing
- **Capacity** control

EVIDEN

Traditional approaches to pricing and their shortcomings

Classical methods

Based on cost & competition

- ✖ Disregards customer demand & other factors

Survey methods

- ✖ Slow
- ✖ Limited insights

Market price tests

- ✖ Slow,
- ✖ Expensive,
- ✖ Limited insights

Econometric methods

Elasticity estimates

- ✖ Low accuracy,
- ✖ Assumes specific demand curve shape,
- ✖ Typically disregards seasonality or other factors, internal cannibalization, external competition and other factors

These issues can be solved using new AI & machine learning methods

Our dynamic pricing approach

Dynamic approach to pricing:

- Helping retail companies set optimal markups for their products
- Aiming to optimize their target metrics such as revenue, margin, consumer base or capacity fulfilment
- Based on AI & machine learning methods

Complex e-2-e solution that directly returns optimal price, encompassing:


Data processing


Advanced ML algorithm


Optimization algorithm

Benefits of our dynamic pricing approach

- Can capture **non-linear relationship** between price and quantity demanded
- Can navigate issues with **data scarcity** of some or all products
- Works with high number of additional features and factors affecting demand such as **seasonality**, **cannibalization**, **competition**, product or customer **charateristics**
- Does not need additional processing of the results -> directly **returns optimal price**
- Has **higher accuracy**

Our basic dynamic pricing approach

Data

Internal

Historical sales
(Transactions, quantities)

Prices
(Historical prices of products or it's substitutes)

Customer features
(Loyalty / non-loyalty etx., demographics)

Product data
(Attributes, descriptions, reviews)

Marketing campaigns & seasonal factors

External

Purchased Data
(Pricing of competition)

Public data
(Weather, public holidays)

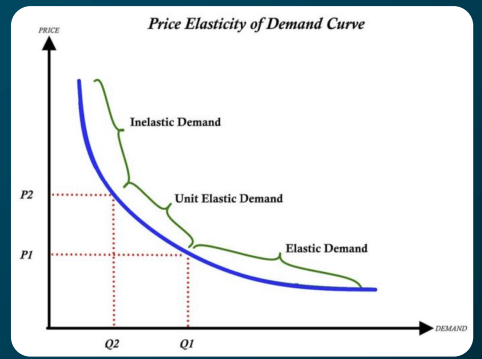
Demand estimation

- ML model/s predicting quantity sold based on product's price and other factors
- Predicted quantity should be highly sensitive to change in price

Our DP Accelerators:

- **PRICING KNOWLEDGE**
- **DEMAND FORECASTING**
- **BASELINE PRICING MODEL**
- **PLATFORM**

- For each possible price we predict quantity that costumer would purchase
- Resulting set of prices and quantities represents **demand curves** => optimization search space



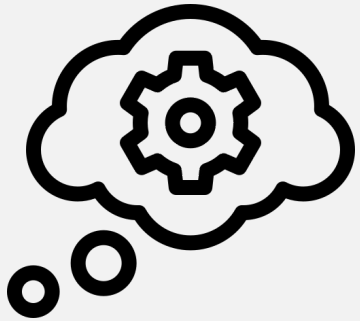
Price optimization / Revenue maximization

Solving optimization problem using estimated demand curves via optimization algorithm:

- given set of possible prices & quantities
- under constraints (price relationship, capacity, etc.)
- with objective to maximize revenue
- for current and/or all future time periods

What to consider?

Our custom dynamic pricing solution is adjusted based on company-specific requirements, needs & circumstances.



- Data availability / variability
- Business constraints
- Canibalization effect
- Search space size
- Evaluation of optimal price

EVIDEN

02. Commercial offering

Dynamic Pricing Business model

accelerator, not an end-to-end product → Implementation project

Business model

Use case driven development
Ownership + T&M consumption

- We provide a cross-functional team
- The team is independently able to handle the end-to-end development
- The team can also be combined with client's internal people ("joint team")
- Pre-built accelerators (currently for free)
- T&M consumption of a fixed budget

Pricing

Blended rate: 700-900 EUR/MD
(depending on a country)

POC (optionally)
- 50 MDs

MVP, AB tests, Roll out
- T&M or priced individually

Reference project

CEE pharmacy chain project:
- Currently 4 FTE team
  (i.e. approx. 1000 MDs per year)
- Started with 2 FTEs
- Multi-year roadmap
- Approx. **EUR 0.7 mil annually**

Our USPs and Competition

Our unique delivery model

Custom development

- All risk on you
- Hard to hire all the people
- Losing time by “reinventing the wheel“
- Complicated SLAs

VS

Modular White Box product & **Joint strike teams**

1. Deployed into the client‘s existing platform in a 100 % transparent & security-compliant way

Azure aws Google Cloud Platform databricks

2. Accelerator-based – not starting from scratch

3. Empowering your data people, not replacing

4. No vendor lock

5. Tailored

6. SLAs & OPS

VS

Black Box products

- Vendor lock-in
- Limited customisations
- Giving data to 3rd party
- Complicated implementation needed
- Another tool
- Buying again what you already have
- Mostly not focusing on retail

pricefx pricemoov PROS omniaretail

EVIDEN

DataSentics

EVIDEN

03. Engagement model

Typical Timeline

1

POC

Building the POC of the demand model using our accelerators based on the available data

Deliverables: Price elasticities, ML approach evaluation

50 MDs
2-3 months

2

MVP

End-to-end solution generating prices to be deployed to production

Deliverables: New optimised prices ready to be deployed

100-400 MDs
3-5 months

3

AB Tests

Design of the test, deployment, measurement and evaluation

Deliverables: Measured results

20-60 MDs
1-2 months

4

Roll-out

Building the robust target solution and roll-out to individual entities

Deliverables: Robust end-to-end pricing solution

T&M

EVIDEN

04. References

Dynamic pricing solution

Selecting optimal price for each product based on actual market conditions

Problem

The client aims to replace their current dynamic pricing solution, which lacks the capability to consider several critical factors such as competitors' prices, market share or specific product characteristics.

Technical challenges

1. **Low price volatility.** Historically only a few price points per each product were observed.
2. Because of the low price volatility, traditional approaches may mistakenly regard the product's price as an insignificant feature.
3. For price points, which are far from observed values, traditional approaches might encounter **non-monotonicity issues and constant demand issues**, where the model predicts higher or constant demand for higher prices.

Solution

Our solution integrates various factors, including market dynamics and competitors pricing, to provide more comprehensive and effective pricing strategy. Furthermore, it can deal with low volatility of the observed prices and maintains strict monotonicity for all considered price points.

EVIDEN

Key Benefits

Can be optimized for chosen financial metric (Revenue, GP...)

Integration of various data sources (such as competitor prices, market share or seasonality)

Higher customer retention due to the fair prices

Our solution is **tailored to each product**, effectively accounting for variations in sales frequency

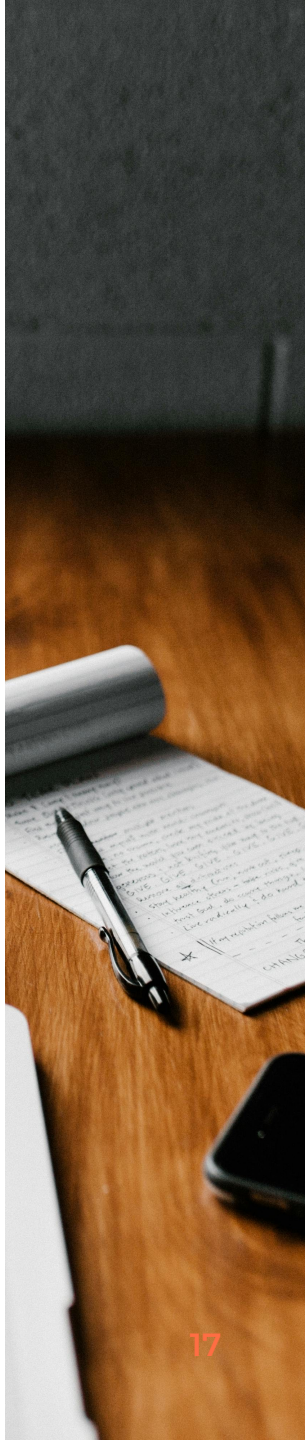
AB test results

Our new solution outperformed the current solution by **36 % increase in revenue**, while still beating the current solution **by 4% in GP**.

About the client

The client is a pharmacy chain operating in many countries across Europe. The client is dedicated to enhancing the level of healthcare by ensuring access to wide range of medicines and services.

NDA



Dynamic pricing solution

Dynamic pricing of air tickets & baggage allowance for unique air flight products in highly competitive environment

Goal

Maximize the revenue from air ticket sales by optimizing the margin in highly competitive market

Maximize revenue from sales of baggage options with high rate of substitability

Solution

Combination of 3 models to find optimal price of air tickets:

- **Search-to-click** model to estimate demand sensitivity to price in a competitive environment
- **Click-to-book** model to predict conversion rate after a click
- **Ancillaries model** to allow for air ticket discounting based on expected revenue from other channels

Real-time dynamic pricing model for bagagge:

- **Demand model** for each type of bag
- **Price optimization** module to find the optimal prices of all bag options
- Additional **constraints** to ensure maximization of total revenue without harming conversion rates

EVIDEN

About the client
Travel fare agregator

NDA

Value

Real-time application with price tailord to each unique product/customer

Higher volume of sales thanks to **discointed** prices

Integration of **competitor** prices & **seasonal** factors in highly competitive environment

Optimization tailored to chosen financial metric/s

Technical challenges

- **Low price volatility** in historicall rule-based pricing
- **Competion prices** are immediately wisible to costumer
- **Canibalization effect** between highly simillar products
- Demand **insensitive to price** changes for some flights
- **Real-time optimization** across large search space & high traffic

EVIDEN

05. Accelarators

Dynamic pricing solution materials

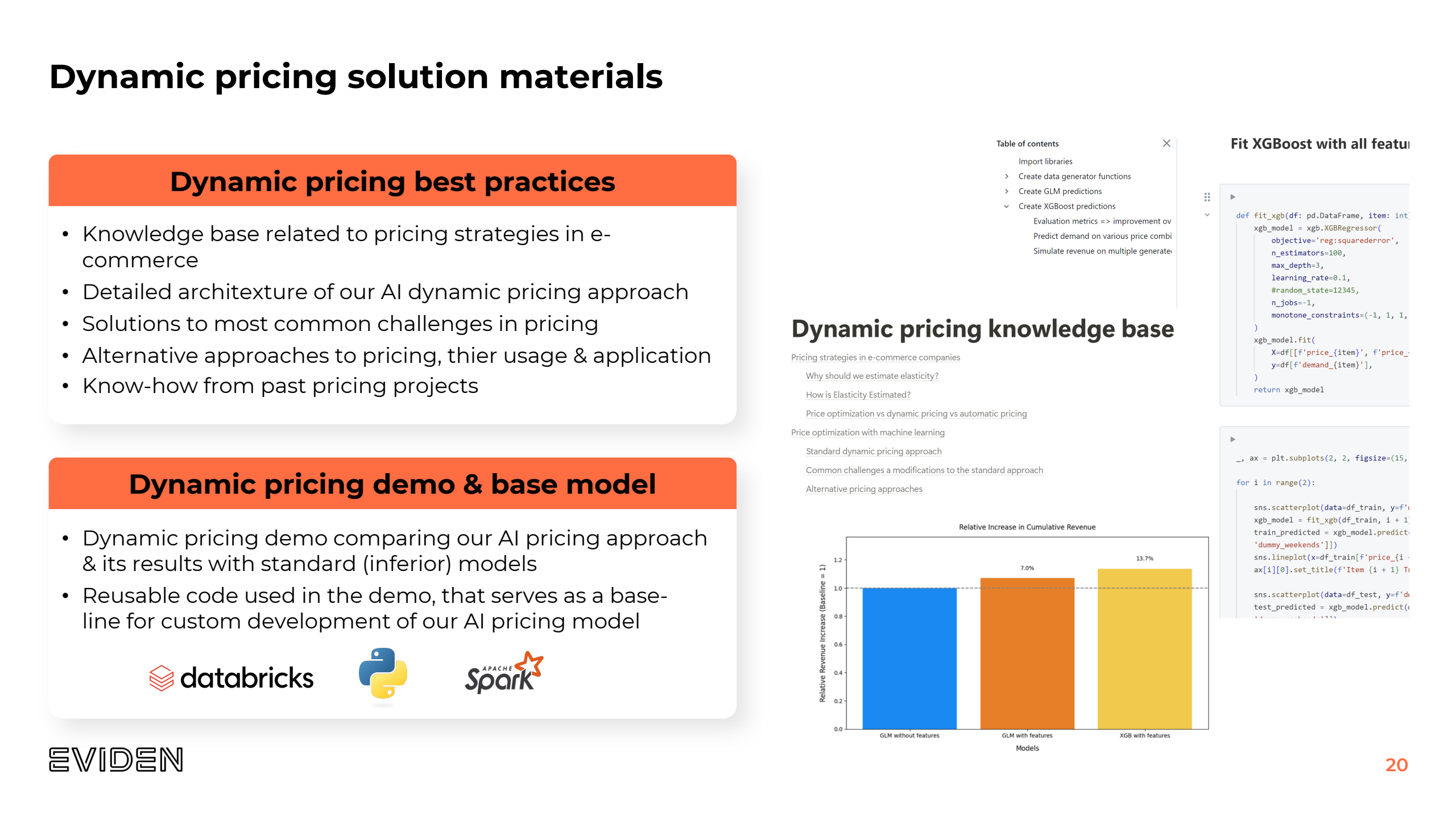
Dynamic pricing best practices

- Knowledge base related to pricing strategies in e-commerce
- Detailed architexture of our AI dynamic pricing approach
- Solutions to most common challenges in pricing
- Alternative approaches to pricing, thier usage & application
- Know-how from past pricing projects

Dynamic pricing demo & base model

- Dynamic pricing demo comparing our AI pricing approach & its results with standard (inferior) models
- Reusable code used in the demo, that serves as a base-line for custom development of our AI pricing model

databricks



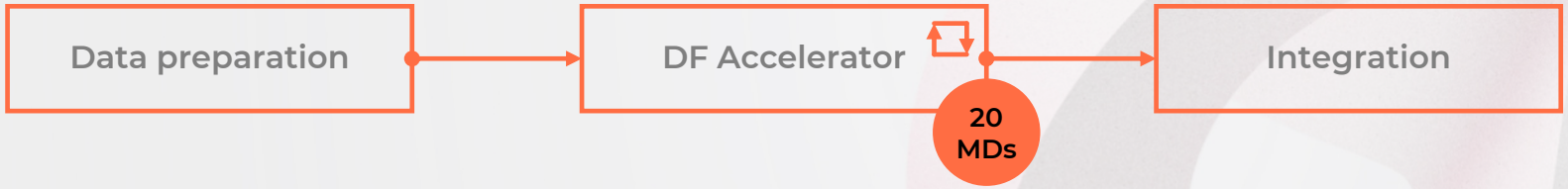
EVIDEN

Demand Forecasting Accelerator

Speed up the development of new time-series based use-cases without the usual pains of feature creation and explorative modeling.

Without the accelerator:

With the accelerator:



Successful applications:

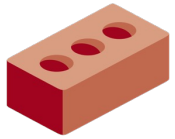
Retail
Revenue management, Supply chain

HLS
Medication demand forecast for pricing optimization

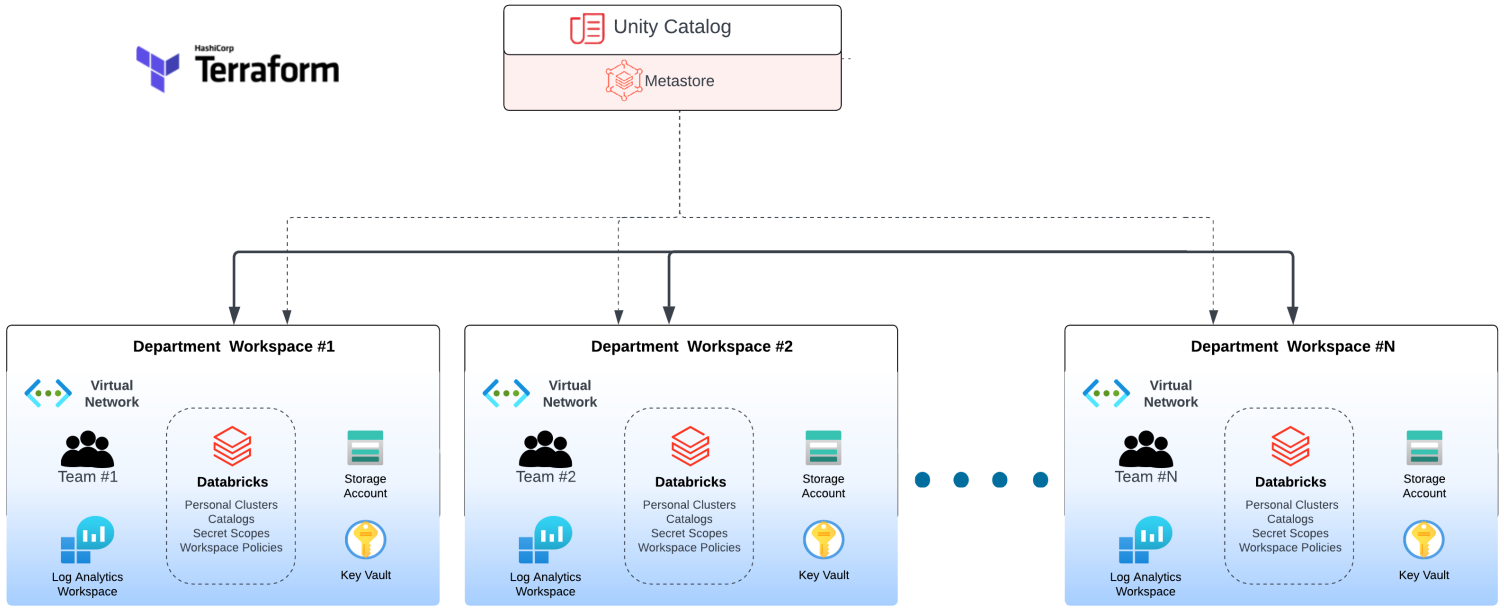
Media
Newspaper distribution optimized for maximum profit

Data Platform Infrastructure Accelerator Bujon

Multi-workspace loosely coupled data platform as a code



- Data teams can **focus on building use-cases** rather than provisioning infrastructure
- Complex multi-provider systems (Azure x Databricks) can be deployed in a span of minutes rather than days and weeks.
- Data-platform can be easily hand-overed to the client.



Key features

- Easier to maintain the infrastructure
- Can be used to setup one time infra or used in CI/CD
- Detailed execution plan
- Modularity
- Complex multi-provider systems can be deployed quickly
- Version control

HashiCorp Terraform

A **free and open-source** Infrastructure as Code tool used for managing and deploying infrastructure and applications in the cloud.

EVIDEN

Thank you