

# Price prediction

Estimating the market price

Determining the prices for products and services is an exercise critical to the success of selling. Price prediction models deliver an overview of the prices accepted by the market. Additionally, they provide a company with access to which features drive each product's price or service.

## The Challenge

Determining the right price for a product or service is a critical factor for achieving profitability. It is highly complex to price a wide range of products, services, and combinations in dynamic market conditions, factoring in product or service features, competition, seasonal discrepancies, promotions, etc. Additionally, given how easy it has become for customers to compare prices online, companies must pay attention to many parameters when determining the price.

## Data Describing Your Customers

Building a price prediction model requires information about the products and services and price levels in the market. This information includes:

- Variables describing products in the market
- Variables describing services in the market
- Prices of the product-service combinations

All variables need to be available as historical data, but they also need to generate each time the model predicts the price of a new product or service

combination. It is essential to select variables that generate for all products that the model should predict the market prices for. The historical data is usually supplied in databases via a connection, an API, or as .csv files. The predictions are generated by sending a JSON request to the model's API and receiving a list containing the prediction.

## Model – Price Prediction

Price prediction uses a supervised non-linear regression model trained on the historical data to recognize the price paid for a given product or service in the training data. The model is deployed using the auto-deployment functionality in our enterprise AI platform, Grace. After the deployment, data is sent via a POST endpoint of an exposed API to the model.

The price prediction model is available as a Grace Standard Model and is a fast track to your first AI model implementation without sacrificing future flexibility or extensibility for scaling AI models across your organization. We maintain algorithms that are 70% ready-made and fitted to your data.

## 3 Facts About The Model

1

Price prediction as a standard model is a fast track to AI model implementation.

2

The model uses product and service data to make price predictions.

3

The model enables you to assign the right price for a product or service in the marketplace.

### Predictions Of Market Price Levels

When buying the Grace price prediction model, historical predictions and model insights are stored and visualized in a BI-tool. In addition to the historical predictions, the Grace price prediction model also delivers model insights. The reason for the prediction can be used to research why certain products have higher prices. In this case, 2021.AI can help set up the BI dashboards to give pricing teams an updated overview (e.g., in Power BI).

### Our Solution

2021.AI predicts price levels of products, services, or combinations by using a supervised algorithm. The mathematical model is trained on a data set, describing products and services, together with the listed prices for them.

The model stores the product, service, or combination associated with a specific price level

with the descriptive variables most likely to drive the price. While predicting the price level, the model also produces insights for each prediction. The model is no longer a black box, but instead, identifies which variables drive the model prediction. In our standard model, we store these insights alongside the predictions to be re-used and displayed in a BI dashboard for further analysis.

### The Business Outcome

Using the Grace Standard Model for price prediction, the company gets an overview of the likelihood that a filed claim is at risk to be fraud, incomplete, etc. and needs to be rejected. With this information, the company can focus on problematic claims and lower its legal costs. Furthermore, the company gets insights into common issues and tricks used in filed claims, and with this information, it starts to change customer targeting and improve the service.

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