

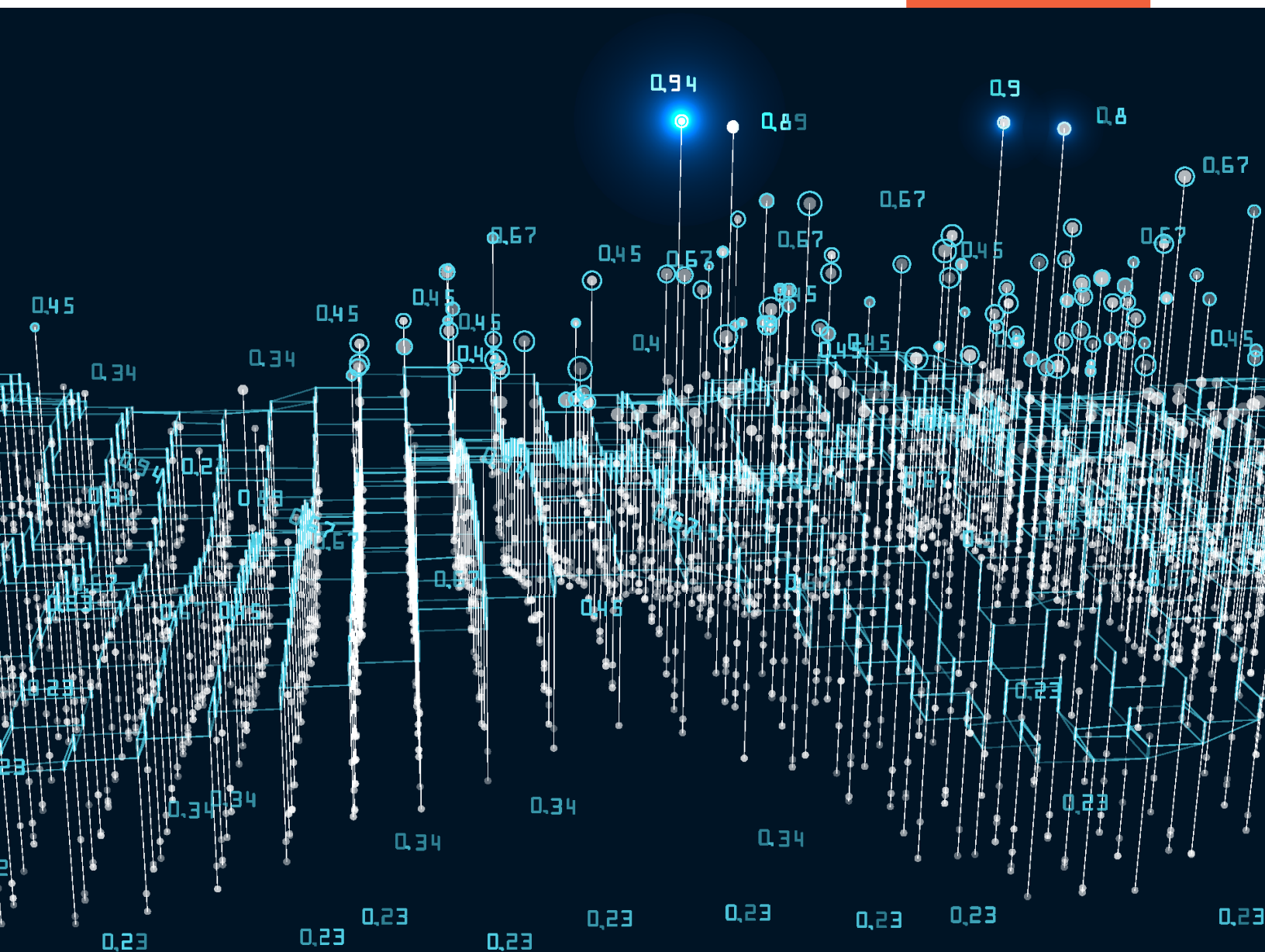
WorldQuant Predictive



Prediction Accuracy Report

Consumer Goods

Q2 / 2023





Who is WorldQuant Predictive?

An Innovator in AI-powered Predictions

We answer high-value business questions with ready-made, AI-powered solutions that are trained on the world's data. Our intuitive cloud platform, **Quanto™**, empowers business users to predict outcomes, simulate scenarios, and optimize results. Our diverse, global team of data scientists, Signal Factory, fuels Quanto with networks of ensemble models. The models are driven by our differentiated data, which are derived from public, commercial and non-traditional sources. WorldQuant Predictive finds signals others miss and delivers them as instant predictive insights.



Why Does Accuracy Matter?

Trust

WorldQuant Predictive's **AI-powered predictive software** helps businesses make better decisions - but it only helps if they can trust the predictions. One of the reasons our predictions can be trusted is their proven accuracy (more on that below). Another reason is our methodology that leads to trustworthy models.



How Do We Ensure Accuracy?

People, Process & Infrastructure

We were founded on principles and predictive techniques that are tested and proven in quantitative finance. Our vision is to apply those techniques to business challenges across other industries. In quantitative trading, mistakes are costly, even company-ending, so meticulous process and rigorous testing are fundamental to business operation. We inherit that mindset, designing our modeling workflow to be systemic and validation to be thorough. This workflow is a combination of people, process and supporting infrastructure that we call the Signal Factory. For full coverage of these principles, [read our Signal Factory whitepaper](#).



How Do We Measure Accuracy Of Predictions?

MAPE Overview

We use **MAPE** to measure, assess and report on the accuracy of our predictions. MAPE is the most widely used measure for forecast accuracy in the demand forecasting world, which is the primary reason why we use it.

However, it is important to note that **MAPE** is not the only metric that should be considered when evaluating the accuracy of predictions. Other factors, such as the cost of making a prediction and the consequences of a wrong prediction, should also be taken into account.



MAPE
stands for
Mean
Absolute
Percentage
Error

For the Mathematically inclined:

MAPE is calculated by finding the difference between the **Prediction Value** and the **Actual Value** dividing the absolute value by the **Actual Value**, and then multiplying by 100%.

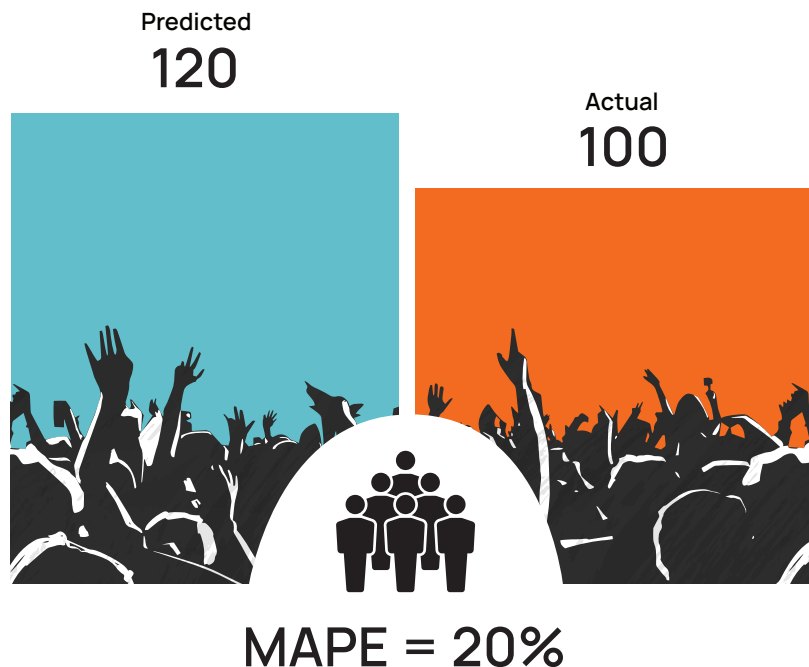
$$\text{MAPE} = \frac{(\text{Actual Value} - \text{Prediction Value})}{\text{Actual Value}} \times 100\%$$

A grey arrow points from the text "Absolute value" to the minus sign in the numerator of the equation.

For the Non-mathematicians:

Imagine you're trying to predict how many people will attend a concert. You might look at past attendance data, or you might survey people to see if they are planning to attend. Once you have made your prediction, you can compare it to the actual number of people who attend the concert.

The **MAPE** is a measure of how far off your prediction was, expressed as a percentage. So, if your prediction was **120** people and the actual number of people who attended was **100**, your **MAPE** would be **20%**.



A lower **MAPE** indicates a more accurate prediction. A **MAPE** of 0% means that your prediction was perfect. A **MAPE** of 100% means that your prediction was completely wrong.

Our Accuracy - By Category

Quanto currently offers a flagship solution for the Consumer Goods industry. We are constantly expanding our solution library, so check back frequently.

Consumer Goods

Skincare was the first category of data that we built predictions for. We're actively adding dozens of CPG categories. If you would like to request a specific category, [contact us and let us know](#).

For our inaugural Prediction Accuracy Report, we compared predictions our platform made for the Skincare market at the beginning of the quarter (in January, 2023), against actual sales numbers in this market at the end of the quarter (January - April 2023).

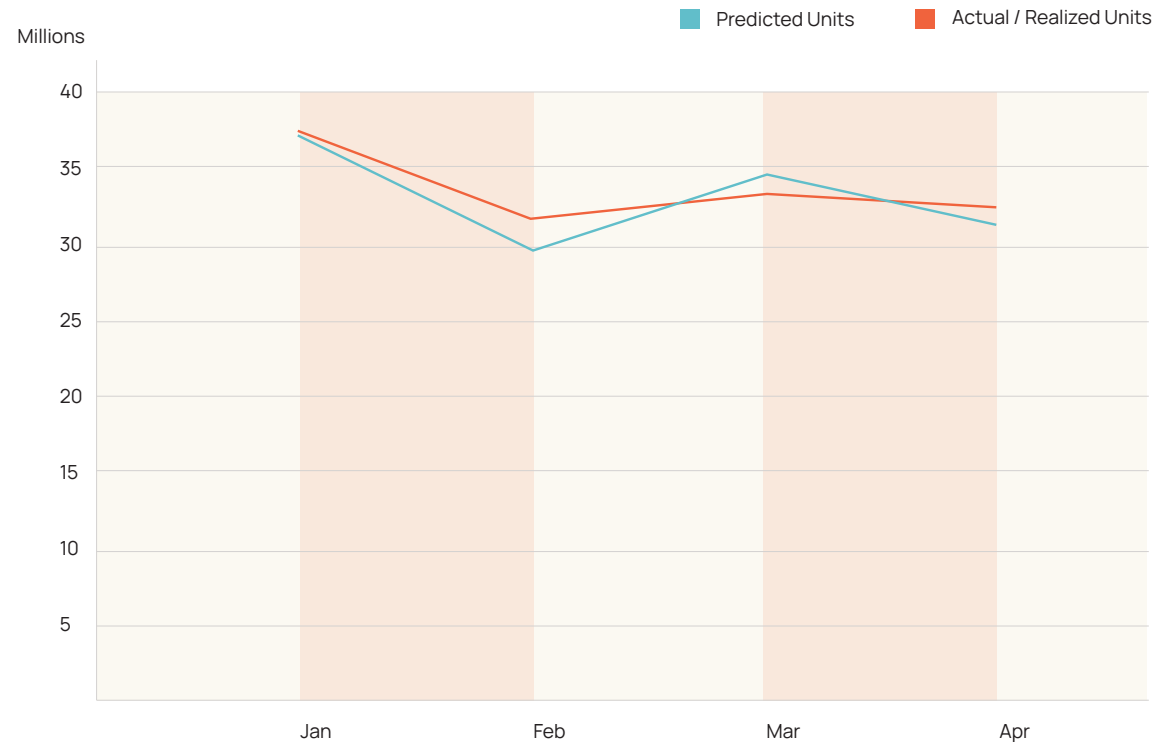
The results prove how shockingly good our predictions are.

Total Skincare

When we initially trained our AI models, we, of course, did not have access to actual sales data from the quarter (January - April 2023).

But now, when we compare our Predictions for January - April 2023 against Actual Sales in the same period, as you can see in the chart below, our predictions were very, very close to actual sales.

Skincare Category



Overall MAPE for the Skincare category comes out to ~ 2%, which essentially means, our weekly predictions at the category-level were off actual sales by an average of only **2%**.

We also ran the same comparison analysis for other categories - Sun Tan and Hand & Body Lotion categories. And the results were equally good.

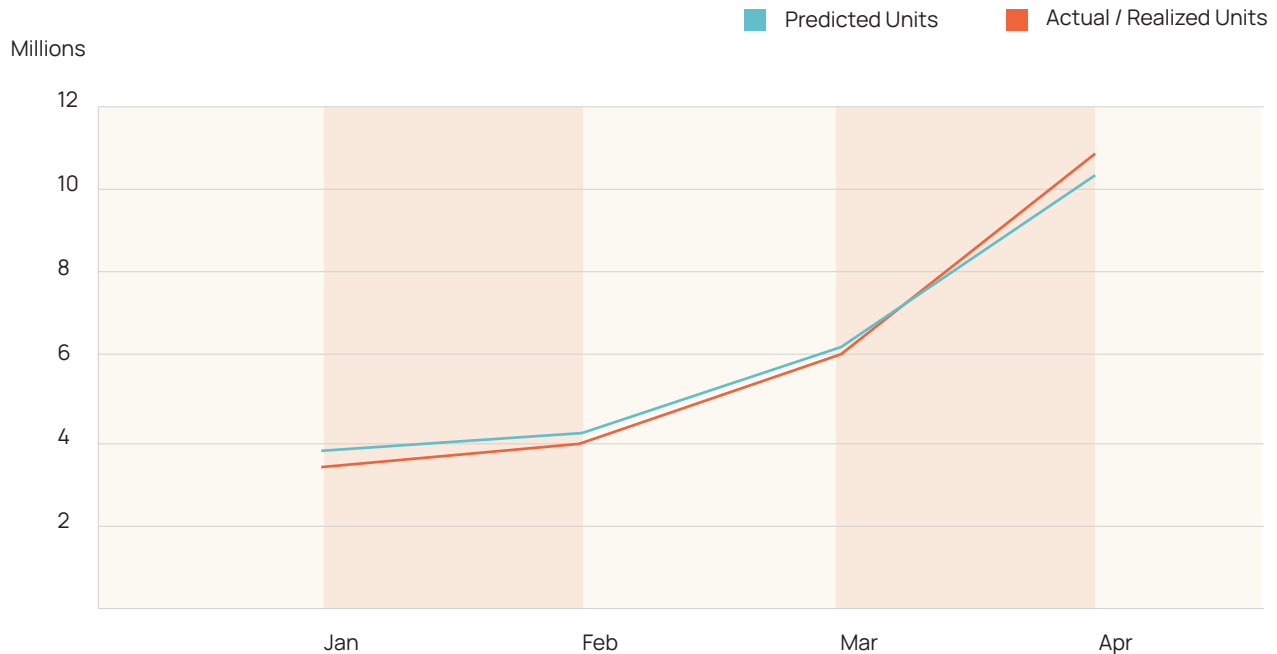
When comparing Predictions we had released back in January 2023 against Actual Sales for January -April 2023, we again saw our predictions were extremely close to actual sales for the time period.



Sun Tan

For Sun Tan products, overall MAPE for our AI models comes out to ~ 5%, i.e. our weekly predictions at the category-level were off actual sales by an average of only **5%**.

Suntan Category

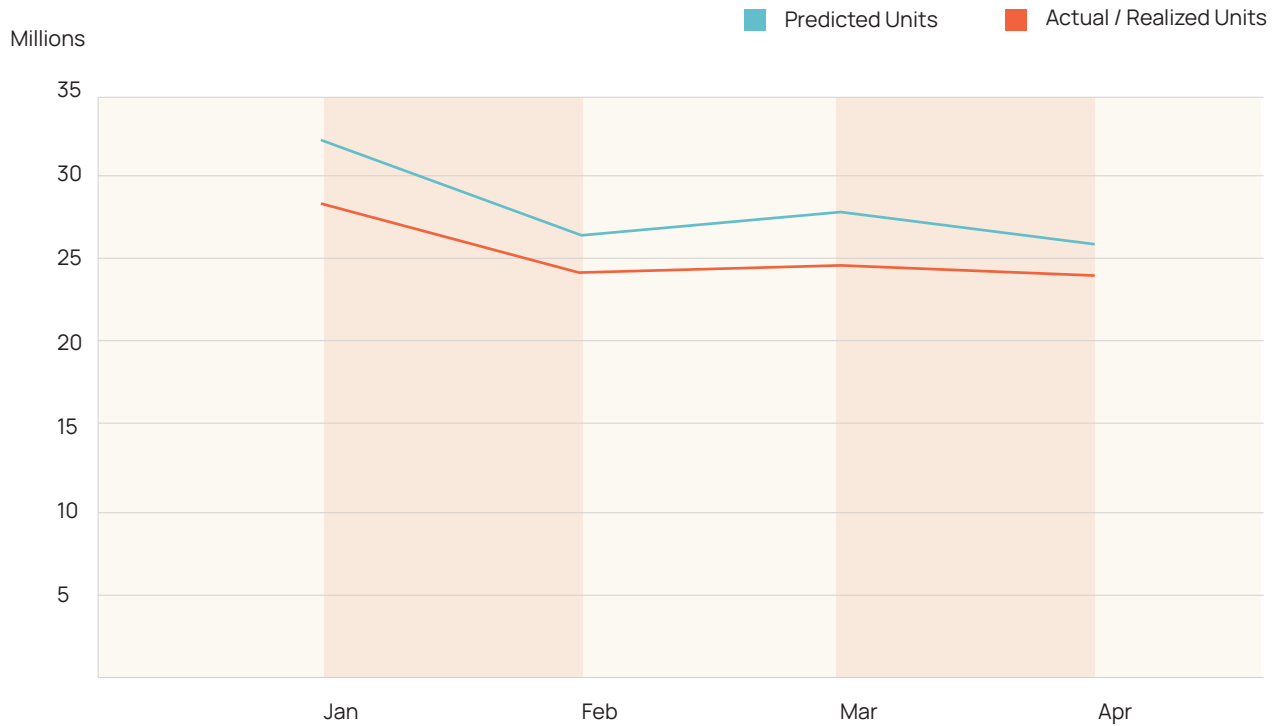




Hand & Body Lotion

While for Hand & Body Lotion products, overall MAPE for our AI models comes out to ~ 8%, i.e. our weekly predictions at the category-level were off actual sales by an average of only 8%.

Hand & Body Lotion Category



Better quality of data, i.e. more UPCs, better coverage, and greater responsiveness to discounts and promotions result in better prediction accuracy for **Skincare** and **Suntan** categories compared to **Hand & Body Lotion**.

Check back regularly for our accuracy reporting. We test obsessively and transparently expose our results in order to build trust in our predictions.

If you would like to see predictions about your brand, [click here](#).

More About WorldQuant Predictive

WorldQuant Predictive (WQP) was established by Igor Tulchinsky with the mission to reduce decision fatigue in business. WQP predicts answers to high-value questions with ready-made, AI-powered analytics.

WQP finds signals others miss in the world's data and delivers them as instant predictive insights, so decision-makers don't need to wait months for answers.

Quanto, our intuitive cloud platform, hosts our array of industry-specific solutions. Each solution predicts outcomes, simulates scenarios and optimizes for results. We enable widespread, frictionless adoption of AI.

We currently offer solutions specific to Consumer Goods and Business Banking and plans to expand to additional markets in the near future.

Why should businesses trust and rely on the predictions in Quanto?

Because it's powered by **Signal Factory**, a finely-tuned supply chain for predictions, forged and proven in the high-stakes world of quantitative finance.

Signal Factory:

Enables a scale and speed for AI-powered predictions that was previously impossible.

- Makes our predictions fast and reliable:
- A diverse, global group of data scientists and in-house expertise
 - Creating vast networks of models powering our predictions
 - Tapping into the world's limitless amount of data, which typically goes untapped to create a unique, differentiated data supply derived from a wide variety of sources:
 - Public
 - Commercial
 - Non-traditional
- Ensures persistently relevant and accurate predictions:
 - Proprietary approach to data and model stewardship
 - Signals and data are constantly refreshed

WorldQuant Predictive, founded by Igor Tulchinsky, is a separate entity from WorldQuant, LLC, a global quantitative asset management firm.

WorldQuant Predictive

Consumer Goods, Q2 / 2023