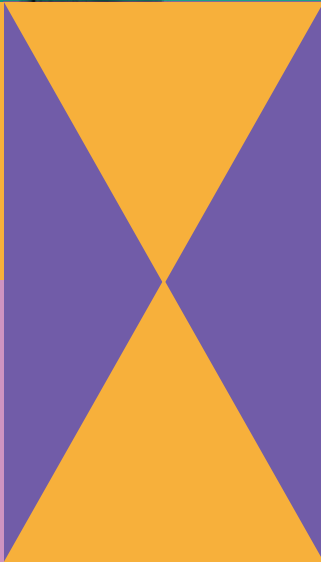
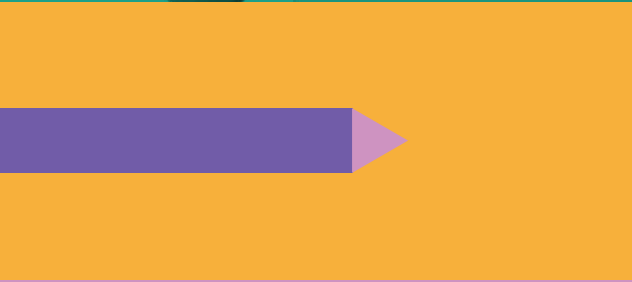




DeepCasting: forecasting with limited historical data

A novel method that is
revolutionizing demand planning





Forecasting with limited historical data

A novel method that is revolutionizing demand planning

Using historical data to predict future trends is a method that has been around for a long time. When it comes to business applications, supply chain and revenue leaders across industries (from retail and manufacturing to airlines and customer service) adopted the method as an effective and straight forward way to anticipate and prepare for future demand. As a result, using historical data became a standard business practice and might even be perceived as the only

reliable forecasting technique available today. However, The latest MIT research shows that it's more complicated than that.

It's true that past events can help us make inferences about trends and patterns. For example, consider coffee. If regular hot coffee was typically the most popular consumer choice during cold months in the past, it's fair to assume that trend will continue.



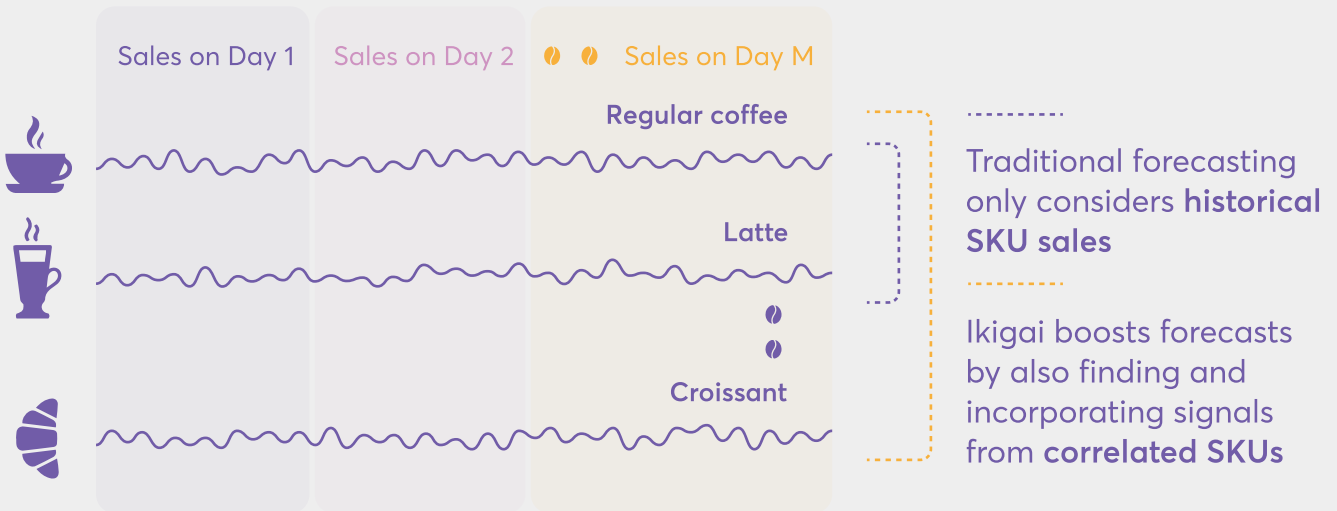
Turns out, knowing how many lattes you sold in the past can help you predict how many regular coffees you'll sell in the future

Yet, aside from seasonality, there are other important factors to consider: coffee's relationship with other caffeinated beverages and how the demand for those beverages affects the demand for regular coffee.

For instance, suppose a portion of consumers discover that a latte is a milder drink and decide to make it their beverage of choice. Regular coffee sales could be negatively correlated with the sales of lattes. At the same time, imagine that consumers who prefer a latte also like to get a croissant with it. So, if you sell more lattes, you also sell more croissants — and less coffee.



What makes Ikigai different



By using this novel approach to demand forecasting, Ikigai is able to drastically improve accuracy while also requiring less data

In our example above, we first looked at regular coffee standalone and, by analyzing its relationship with time, could predict its future sales patterns. The same would be true for the other two products, lattes and croissants. Then, once we considered all three products as a cohesive system of relationships rather than unrelated products, we were able to add more dimensions to our analysis

(coffee vs time; coffee vs latte; coffee vs croissant). Therefore, we could draw a more nuanced picture of consumer demand.

Thus, the greater the variety of products or services, the more dimensions that can be added, which yields higher forecasting accuracy. And this is where the most exciting discovery comes in. As it turns out, not only do these inter-system relationships add more accuracy to time series forecasting, but they can also serve to fill in the gaps if historical data is limited to as little as 2-3 weeks.

This novel method has been thoroughly studied and fully developed by MIT researchers recently. Because this method looks at demand forecasting holistically, meaning that it

considers all the relationships among all the elements of the system, its forecasting accuracy surpasses the one of other existing state-of-the-art techniques, including deep-learning methods.

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This holistic approach to forecasting is especially valuable during times of uncertainty, such as the effects of COVID-19 on virtually all industries, in terms of disrupted supply chains and shifted consumer demand. Ikigai makes this method available at scale in a no-code manner through its operational BI platform, which is already used by forward-looking enterprises as well as fast-growing start-ups within finance, insurance, retail, logistics, and other industries. At the end of the day, forecasting is not the end goal but a means to an end.

Ikigai enables these high-quality forecasting techniques to produce insightful actions that can answer questions — such as, **“What SKUs should I order today and how many?”** — that ensure the best return on investments.



In addition to predicting demand with as little as a few weeks' worth of historical data, Ikigai's demand forecasting solution provides confidence intervals for each SKU

Contact us now to watch a live demo or try this forecasting method on your data for free.

<https://www.ikigai labs.io>

