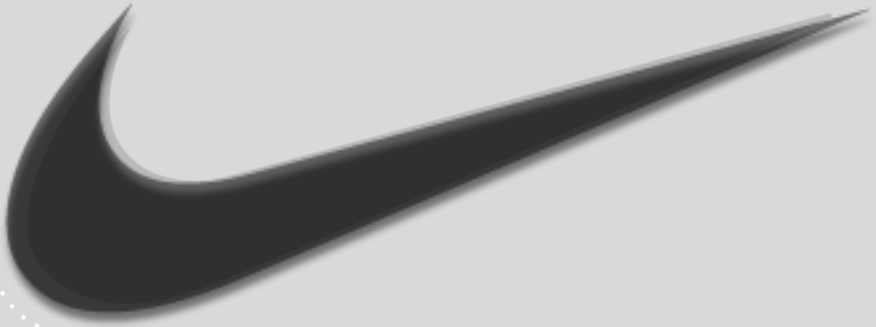
NIKE BY YOU

x CASCADE DATA LABS

a NIKEiD Case Study



by Ferdie Taruc

Hello!

I am Ferdie Taruc.

U.C. Berkeley, Economics & Data Science

Prompt

Client: senior executives of Nike

Problem: Diagnose why NIKEiD department missed sales forecast targets for the last 2 fiscal months

Include: how to validate hypotheses and further actionable recommendations to improve Nike's business

Data: every click on the website, product metadata, sales history, customer data, etc

Assume: NIKEiD was operating under normal, non-COVID economic conditions

So, what to expect?

context

NIKEiD Explained

- What Products?
- Which Market?

hypothesis

Change in User Behavior

- Understanding "Less Demand"

+ Solutions

the "why"

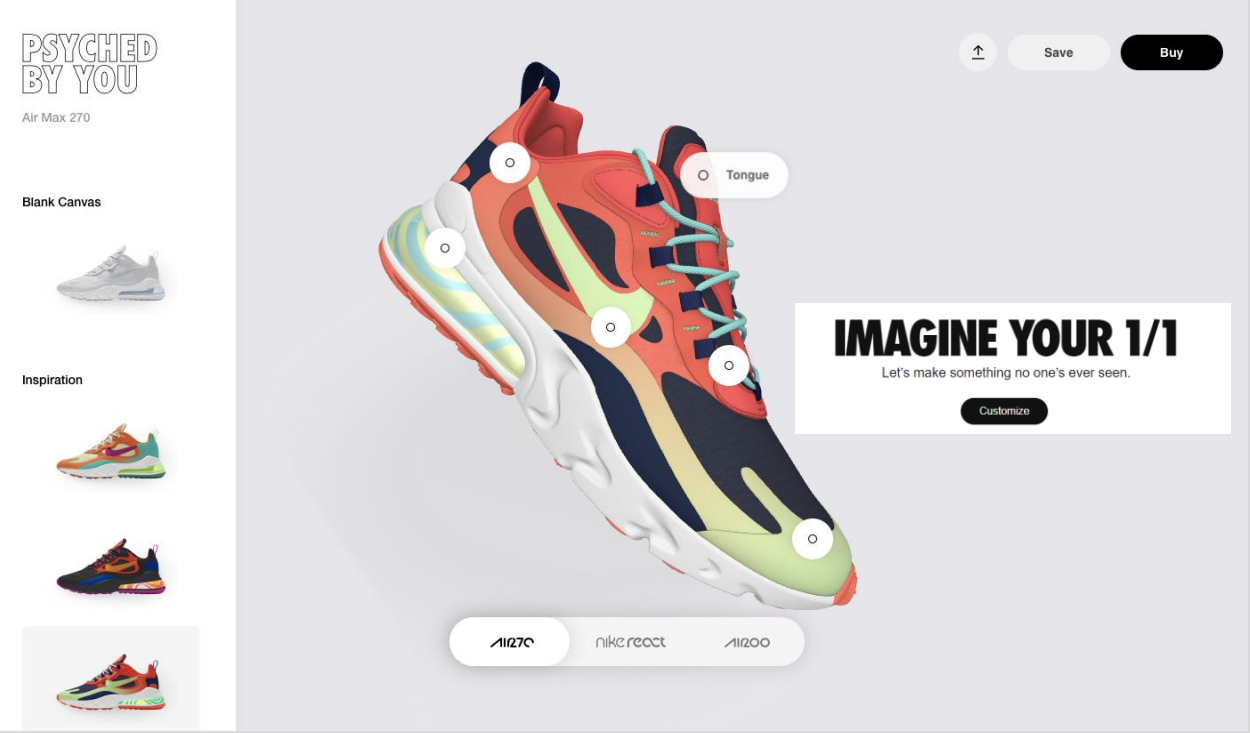
Internal or Systemic Issues

- Production Issues/Supply Chain Mismanagement
- Changes In UI/UX
- Initial Forecasting Model
- Regulatory Changes

conclusions

Last Thoughts & Recommendations

What is Nike By You?



Originally **NikeiD**

Allows consumers to **customize** designs of Nike merchandise, not necessarily buy

Understand market: Customer retention or new unique visitors?

Some products are “member exclusive”

- Metadata of member accounts can be now tracked

It's hard to isolate "why" forecasted sales diverge

1. Granularity of Sales

- Different Demographics (region, gender)
- Types of product (lifestyle, sports, running, etc)

✓ % change of sales (growth rates), conversion rates

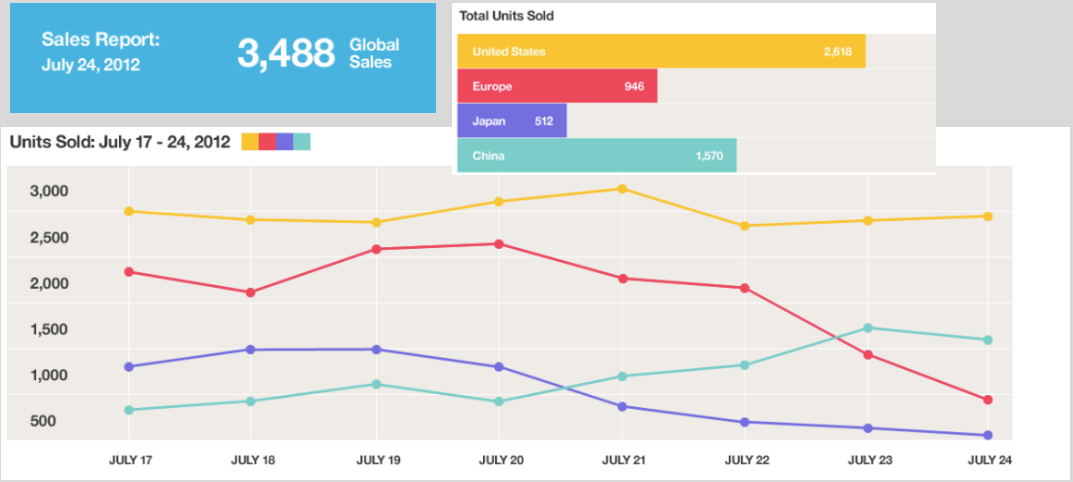
- weekly, monthly

✓ Use personalized account metadata to create custom market segments?

Solution: Model "Less Demand"

- ➢ Track and compare different KPI's **over time**; calculated through website metadata
- ➢ Then pinpoint "why" with more granular information

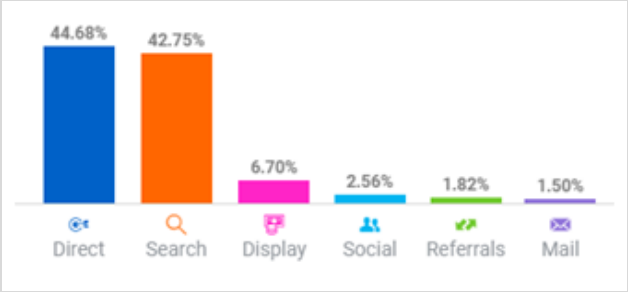
Clarifying "Bad" Dashboards – should filter into granular layers

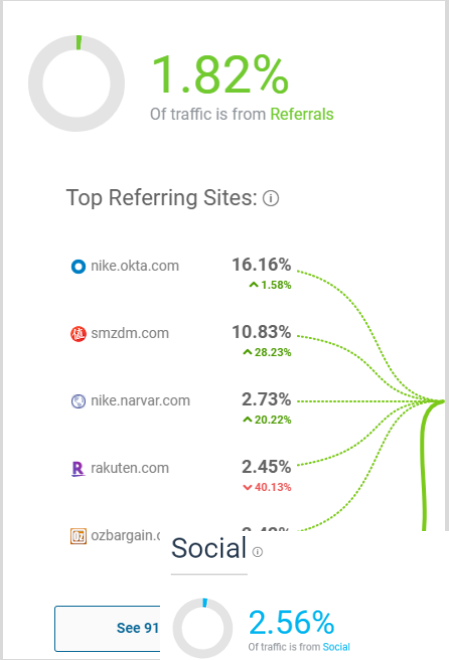


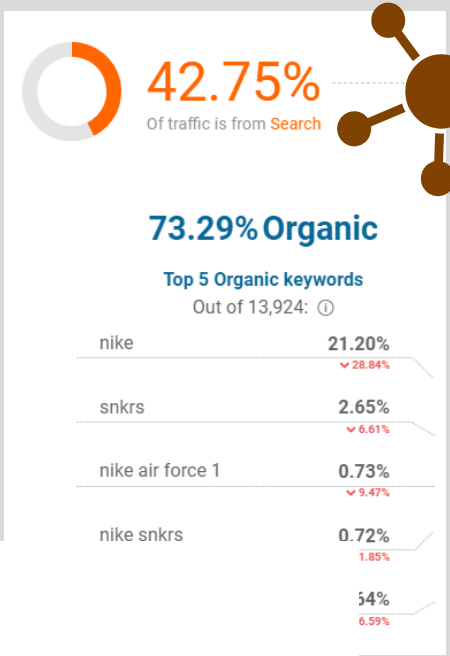
Source: https://www.pinterest.pt/pin/1900024816720976/

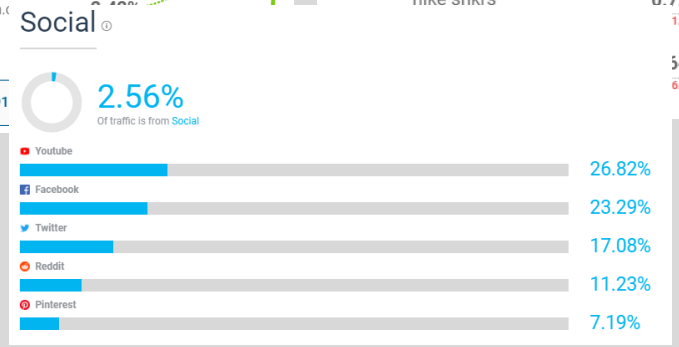
2. Different Sources to Sales

- Track **conversion rates** and growth rates of new unique visitors from different initial sources over time
- ➢ Social Media, Nike App, Nike.com, Display Web Advertising, etc
- Check if problems with incoming traffic sources (referring sites, mobile platforms, etc.)









Source (Dec 2020 Nike Analysis): https://www.similarweb.com/website/nike.com

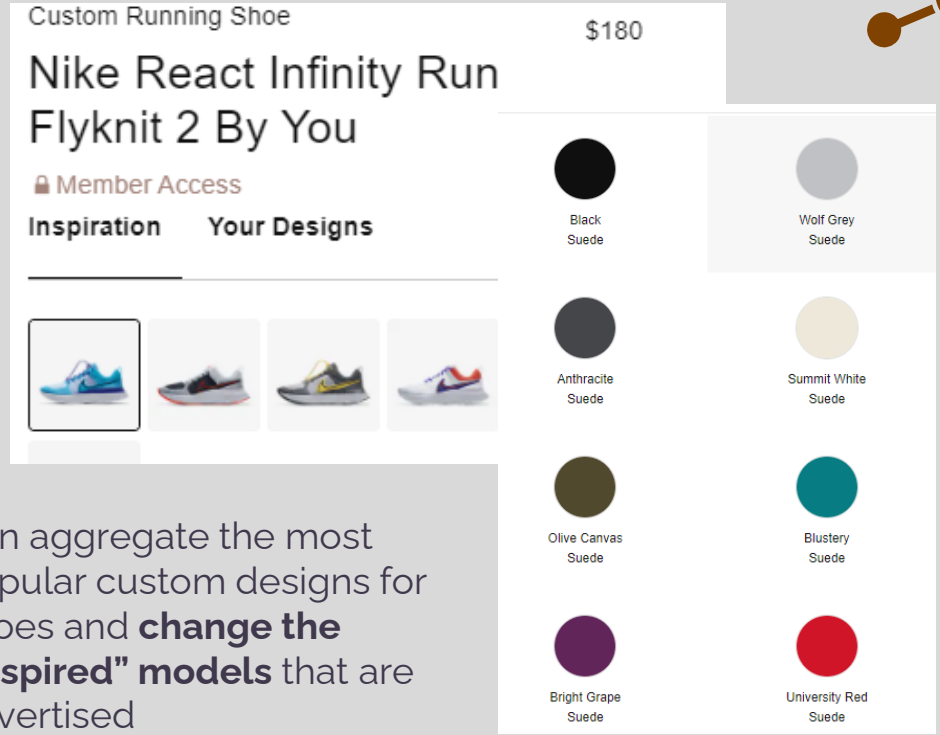
3. Different Products (Price & Colorways)

- Compare **click through rate** (landing on product screen and hitting 'customize')

➢ affected by design choices on how products are displayed (how much/which products on front page)

- Check if High CTR but low conversion rate then:

➢ track when does customer **bounces** (product info vs. customization vs. billing)



✓ Can aggregate the most popular custom designs for shoes and **change the "inspired" models** that are advertised

Anticipating Change in Demand

Tracking Public Sentiment

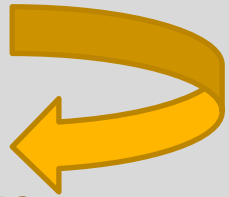
- People boycott or promote products because marketing campaigns with social figures (Colin Kaepernick)
- Aggregate/scrape reviews from social media (twitter) or Nike app reviews
- Apply **sentiment analysis** on different traffic sources

Dashboarding & Communication

- Dashboards need to be more granular and specific for each team
- Greater communication among departments

➢ Merge departments for less overhead?

Detect Less Demand



Marketing campaign to target these segments before fiscal quarter ends

- cost-benefit analysis

- sometimes impossible, better to target other segments

Sometimes “systemic/internal” issues exist

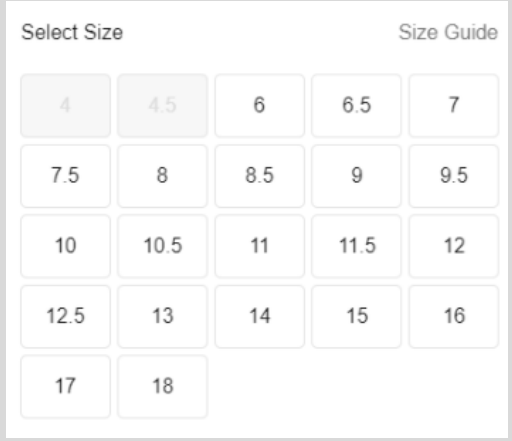
Production/Supply Mismanagement

- Track if users are willing to buy, but not enough supply

➢ Clicking on ‘shaded out’ size or ‘bounce rate’ at product screen

Regulatory/Policy Changes

- new laws or regulations can affect your sales prospects
- government blocks access to your website, banned on social platform, etc.



Implement “notify me” to track demand

Changes in UI/UX

Interface can be **broken** or just **unclear;**

- different products have different interfaces
- affects user's **willingness to buy**
- tracked if user leaves site at customization

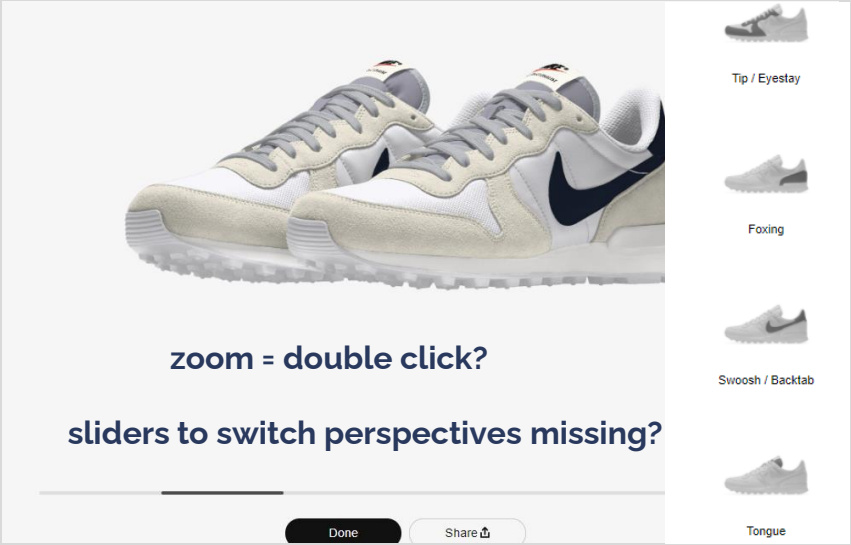
➢ check for activity on customization screen

➢ track users' clicks if it makes sense

Ensure safe framework so it's stable before deployed into production

➢ Use A/B testing on certain regions/products to see if any changes in UI/UX decreases sales or other KPI's

minimal vs clear



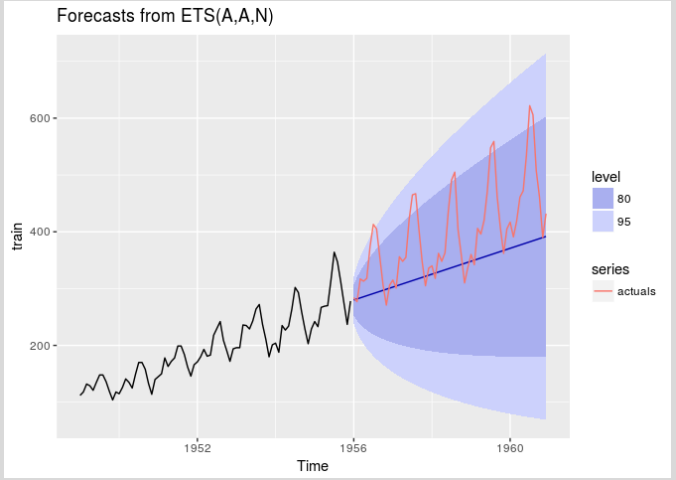
Maybe there are “flaws” with the forecasting model

- Model might not capture **seasonality**
- **Data leakage** causes anomalies in predictions
- **Normal to diverge** (statistically) if it’s within confidence intervals

➢ Proper ETL to date warehouse? Are databases properly managed? Recent changes in data infrastructure?

Model updated in real time with new data frequently?

➢ New trends, insights, or tendencies are not captured by past data



Has assumptions of the model changed?

➢ Change of parameters? New data might not fit model

Don’t rely on one model?

➢ Cross-validate results with a range of forecast models

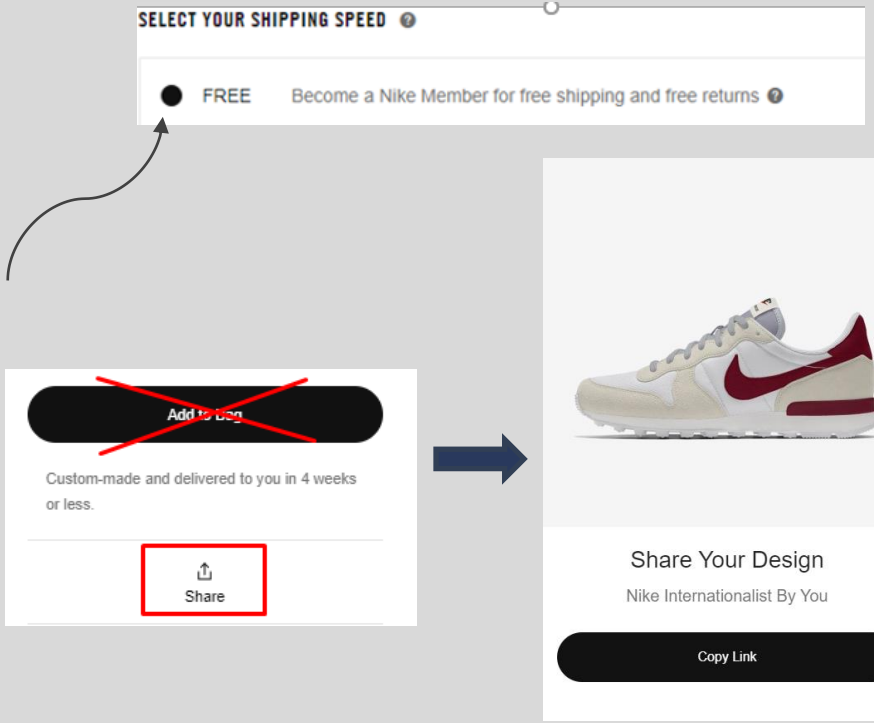
➢ Average results of multiple forecast models across different types of products (lifestyle, sports, etc)

Final Thoughts

- **Holistic approach** to isolate divergence in forecasting
- Counteract **“lower demand”** that leads to sales
- **Promote Nike “Membership”** for generating long-term user metadata for better recommendation systems

➢ “Similar members with similar tastes have similar product interests”

- People sometimes create as an **art form**



Thanks!

Any questions?