Business Project Proposal

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Client: Costco

Question/Need: As a wholesaler, Costco excels in selling large quantities of selected goods at a cheap price, and because of that, Costco’s shelf space cannot accommodate a large selection of brands. Costco needs to efficiently allocate its limited shelf space to goods specific to the regions of the United States. Particularly, Costco is interested in tapping into the work-from-home (WFH) market and wants to know which region/demographic of the US has an emerging WFH population.

Impact: My work will inform Costco on which region of the US they should build new warehouses in, and in the existing warehouses, which ones they should adjust their catalog to accommodate the WFH customers.

Impact hypothesis: Adjusting warehouse location and catalog for the WFH customers will help reduce Costco’s shipping cost and attract more customers.

Data Description:

* US Bureau of Labor Statistics WFH data: https://www.bls.gov/opub/mlr/2020/article/ability-to-work-from-home.htm
* Costco Warehouse Location data: <https://github.com/swinton/Visualize-This/blob/master/ch08/geocode/costcos-limited.csv>
* Apple Mobility Data: <https://covid19.apple.com/mobility>

Solution path: Classification to predict where to build new warehouses. Predict catalog/demand at a store regression, time series WFH, ARIMA model, customer segmentation WFH, poisson regression to optimize stock in warehouse.

Criteria for Success: Increase in customers, decrease in budget.

Assumptions: WFH customers are more likely to rely on delivery. WFH customers are less likely to drive.

Risks: The WFH trend dies down as the pandemic ends.

Tools: Python and Tableau

MVP Goal: Mapping Warehouse Locations to the US map. Mapping Apple Mobility data to the US map.