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- Project Sponsor: Kanika Sodhi
- MIT Advisor: Professor Mohammad Fazel Zarandi

Problem Statement

What?

Enable customer targeted in-store assortment decisions to maximize revenue in US Target stores, informed by historical customer purchase behavior

Why?

Inventory Management

Demand-Supply Balance

Shopper Experience

Waste Reduction

How?

Optimize in-store assortment using choice modeling and trip data to maximize guest engagement with products

Data

Datasets

Guest

POS Sales

Guest Trip

Item

Inventory

Store

1955
Stores

30+
Brands

325+
Products

Business Impact and Validation

Business Questions that are answered by the project

Which products should stores consider removing?

Which products should stores never run out of?

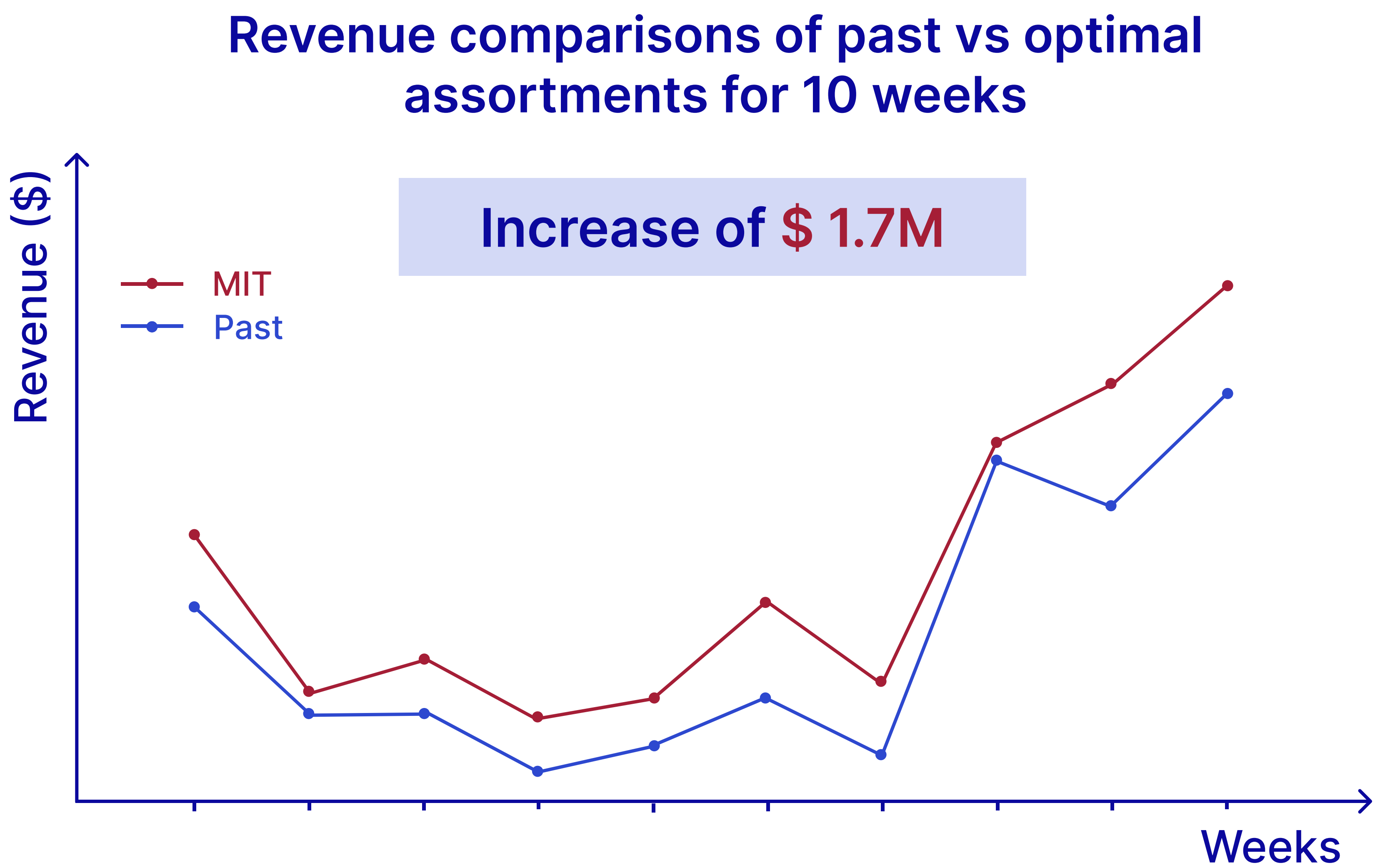
How is revenue impacted when a product is substituted?

Data-driven decision making

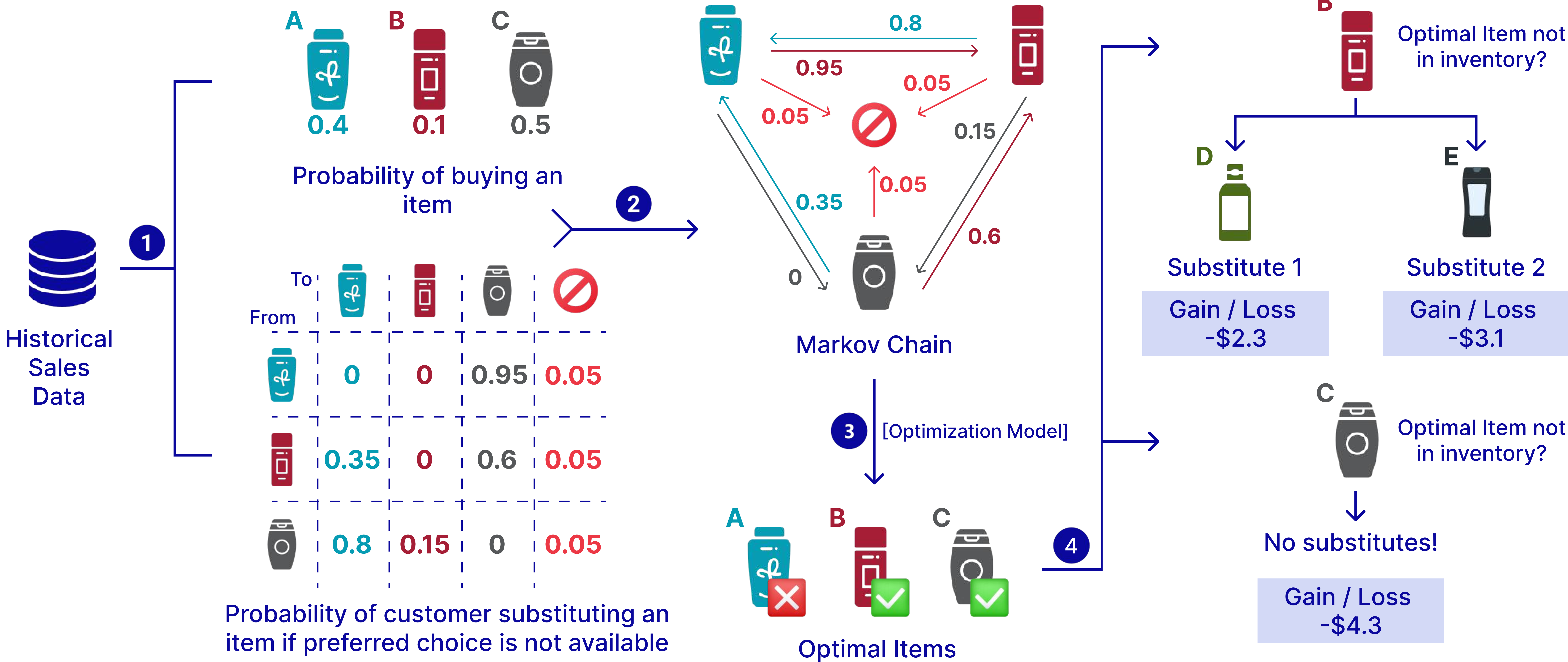
Scalable across customers

\$ 1.7M

↑ in Revenue



Methodology



Next Steps

Extend the model to include product-specific attributes and assortment-specific demand

Recommendations for Unilever to drive impact with their core products and optimal products

Expert Review

Kevin Casey
Associate Director

"We see 2-3 points of sales growth being delivered by this new capability. We're excited to embed this into our working processes and bring new advanced analytics to our Customer partners and decision making processes"

Ye Xu
Sr. DS Manager

"From this project, students solved business question on optimal assortment which will generate big business impact for Unilever, also they quickly adjusted to working in industry environment and provided satisfactory results. Happy for their progress and very proud of their work!"

Professor Mohammad
MIT Senior Lecturer

"Luca and Vidushi's dedication and hard work were evident in their comprehensive analysis, which significantly improved assortment planning and operational efficiency at Unilever. Their meticulous attention to detail were highly commendable, demonstrating their strong analytical skills and problem-solving abilities. Their project has provided a useful reference for future efforts in assortment optimization"

