

HACK- AT-OW & K!-



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Health & Safety

- Any issues, please contact a King's Labs member
- King's Labs members will be around the space
- For First Aid, contact a King's Labs member, or head straight to the main reception on Level 1
- Maintain a safe and respectful environment
- No fire drills are planned, if you hear the fire alarm, leave through the nearest exit and disperse for 30 minutes
- Look after your personal belongings

WhatsApp GC



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Event timeline - Saturday

11am - 1pm	Hacking
1pm	Lunch
1pm - 6pm	Hacking
10pm	Bush House closes



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Event timeline - Sunday

9am - 3pm

Hacking

3pm - 6pm

Presentation + Closing
ceremony



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Lunch

- We will give out lunch vouchers for the lunch break in the Hacking Spaces

Rules

- tackle the challenge in groups of 2-4 people
- present your solution in a 10-15 minute pitch to the judges on Sunday

Challenge and Data



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HACK- AT-OW & K/L

Sustainable Promotions
Challenge: Designing a sustainable promotion program

2025

A business of Marsh McLennan





CONTENTS

1

Your Task

Introduction to the final challenge of the hackathon

2

Final Presentation

Structure of final presentation, evaluation criteria and top tips

3

Team Allocations

Allocation of teams for final challenge

A

Appendix - Datasets

Data dictionary for datasets provided as part of the final challenge

B

Appendix – Submission Criteria

Details of submission criteria

1.

Your task



EVALUATING SUSTAINABLE PROMOTIONAL PROGRAMS FOR AN ASIAN HEALTH & BEAUTY RETAILER

Context

- After finishing with the data quality checks, analysis and forecasting of sales conducted in Phase 1, Oliver Wyman has been engaged for an extension of the project to help the same Asian retailer with their promotion strategy for Malaysia in 2024
- Data has been cleaned and estimated sales baseline figures have now been agreed based on the work from the previous phase and signed off with the client
- Based on these estimates, and following heated discussion within the client teams, the product category teams have prepared options for potential promotional programs with different focuses and would like Oliver Wyman to help them understand their impact
- Aligned with the sustainable goals of the company, they also want to evaluate the carbon footprint of the promotion program
- The company has recently signed up to net zero agreement and have agreed to offset their carbon emissions for products sold from 2024 onwards
- Your task is to advise the product category team on the impact of the potential promotional programs in terms of commercial and sustainable impact and which one you would advise

THE FOUR PROMOTIONAL PROGRAMS

Low Emissions

- The climate & sustainability team believe that we should be prioritising low-emission products and that we can make the money back in reducing the amount of carbon we offset
- They believe this will improve the brand of the retailer to customers in the long-term and drive growth
- **Promotion: 20% discount on 10 products with the lowest carbon emissions per unit sold**

Best Sellers Only

- One category manager believes we should prioritise the products which are already popular as this will drive a bigger increase in sales when offering discounts He believes that this will help the retailer gain market share compared to their competitors
- **Promotion: 10% discount on the top 10% of products by estimated sales**

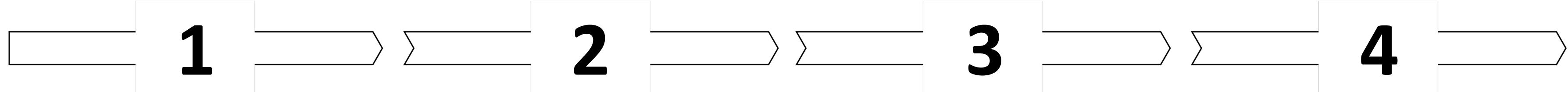
Supplier Support

- Another category manager has been able to negotiate with a supplier and has arranged a bonus from the supplier where they will pay back 50,000 RM if the retailer sells over 2 million RM worth of products supplied by them
- She believes they are a critical supplier to the retailer and this could aid future negotiations with a potential to reduce costs
- **Promotion: All products from Supplier 1098896101 with 15% direct discount**

Category-wide Promotion

- Following all of this discussion, a senior category manager believes this has gotten too complicated and has therefore suggested that all products should go on promotion at a low discount
- She believes this a large-scale promotion will drive more customers into the store and improve sales for the entire category
- **Promotion: All products with 5% direct discount**

YOUR TASK



1 Retrieve and join the necessary data

- The sales team provided you with the agreed estimation for 2024 sales for products which are eligible for promotion
- You will be provided also with their respective information regarding product costs, elasticities, and emission intensities

➤ You need to understand the different data sources provided and retrieve the necessary data for the modelling task

2 Evaluate the impact of each suggested promotional programme

- Using the provided baseline sales estimates for 2023, assess impact of the promotional programs considering:
 - Sales & Costs
 - Emissions & Offset Cost

➤ Prepare at least one slide to understand the impact of each promotional program for relevant KPIs

3 Assess the holistic benefits of each promotional program

- After evaluating the impact using the data provided, assess what other criteria may affect the success of each programme
 - How will customers perceive the programmes and what other effects could they have? Do the client beliefs make sense? Are there other benefits or downsides?

➤ Prepare at least one slide in which you detail the expected impact of your chosen program and why

4 Create the slides and present your strategy

- Prepare the final presentation by creating a good story on how you will promote your chosen programme to the board of directors of the Asian retailer and expect to answer questions
- Given the time constraints, you will have to be selective with both content and wording

➤ Coordinate with your team to finish your strategy and prepare to present it in an attractive way in the final round

PROMOTION CRITERIA AND ASSUMPTIONS

Promotional Programme

Clean estimated 2023 sales data has been provided for all products which are considered eligible for promotion.

The promotional programmes are expected to launch from the **1st July to the 31st July (inclusive)**.

When optimizing for the emissions and margin, the environmental protection authorities estimate the costs of offsetting carbon emissions to reach **0.25 $\frac{RM}{KgCO_2}$** which the retailer has committed to offsetting for their products sold

-
- Promotions must run across all stores**
 - ✓ i.e. promotions will run nation-wide to drive consistent promotional offerings across regions and online/offline
 - Emissions data is assumed to be additive and per unit of product sold**
 - ✓ i.e. the emission data per category, brand, and supplier is independent and additive per unit of product sold
 - Margins (as a % of actual sales) are assumed to be constant**
 - ✓ When applying a discount to a product, the supplier has agreed to maintain the margin after discount i.e. if a retailer previously earnt 30% margin on a product and now offers a 10% discount, they will continue to earn 30% margin after discount
 - Reminder of elasticity definition**
 - ✓
$$\ln(Elasticity) = - \frac{\Delta Volume}{\Delta Price} \frac{Volume_{before\ promotion}}{Price_{before\ promotion}}$$
 with $\Delta = (value_{after} - value_{before})$
-

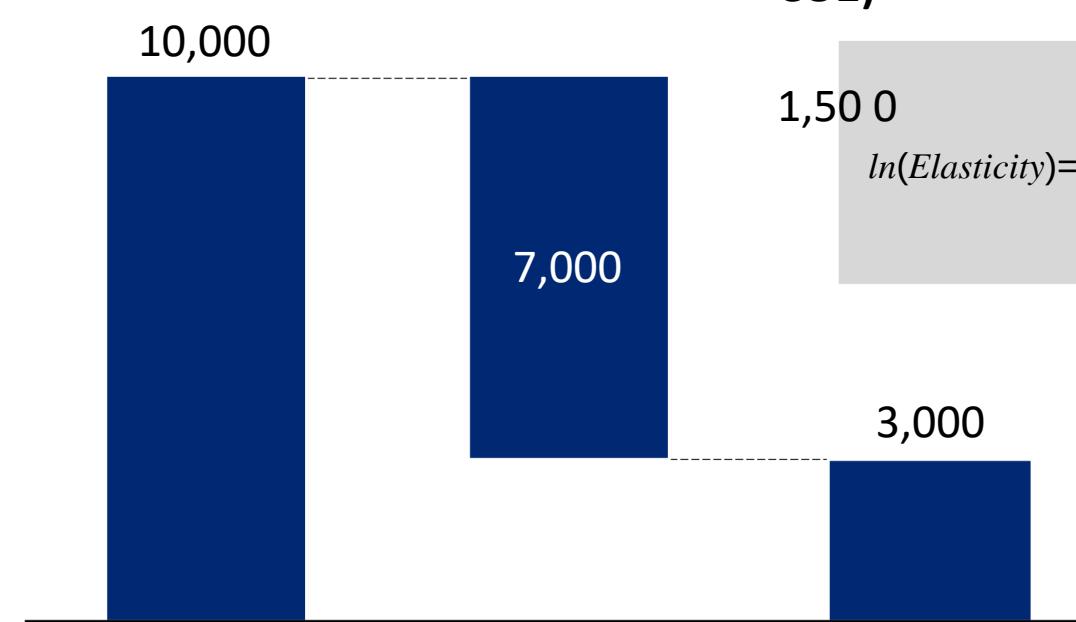
LET'S WORK THROUGH AN EXAMPLE TOGETHER FOR A SINGLE BEST SELLER PRODUCT...

Example Product-level Sales, Margin & Emission data

Product Key	Month	Est. Baseline Full Price Sales (RM)	Est. Unit Volume Sales	Margin %	Elasticity	Emissions per Unit sold (kg CO ₂ per unit)
A	2024-07	10,000	1,000	30%	2.00	1.5

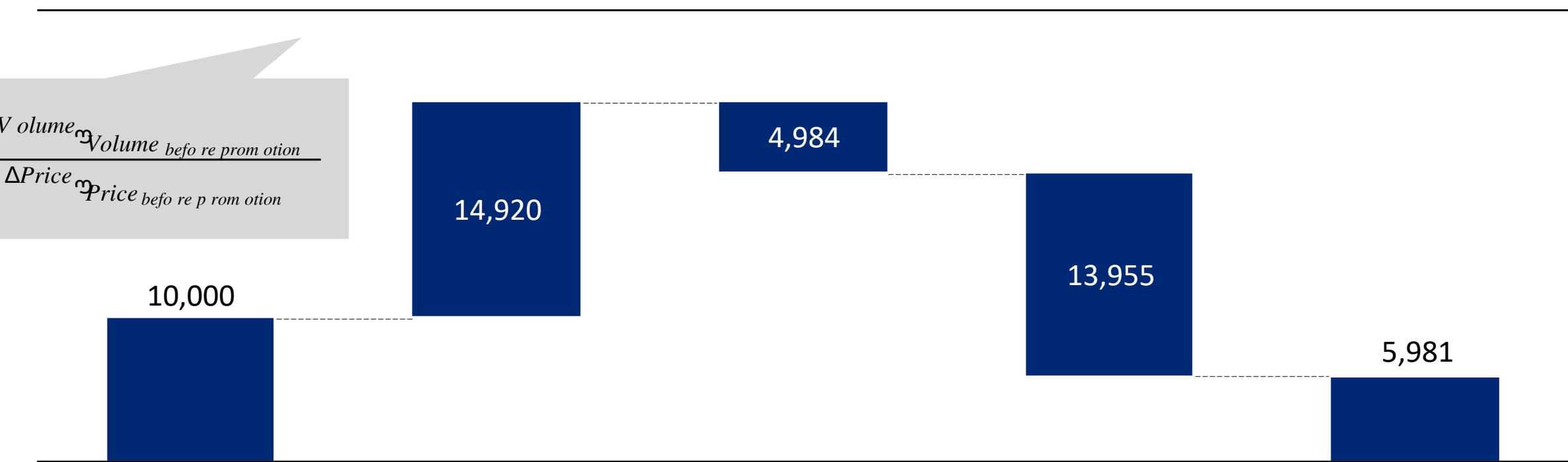
Without Promotion

Baseline Sales (RM)	Total Supplier Cost (RM)	Total Emissions (kg CO ₂)
10,000	7,000	



With Promotion

Discount %	Unit Volume Uplift	Sales Uplift (RM)	Total Discount (RM)	Total Supplier Cost (RM)	Total Emissions (kg CO ₂)
20%	1,492	14,920	4,984	13,955	2,100



2.

Final round and presentation



What will be evaluated



Overall promotion strategy

How the promotion strategy fits with the goals and context of the retailer will determine if it makes sense to go with the strategy



Impact of the solution

The amount of sales uplift, profit and the emissions generated will be the key measures in the assessment of the potential programmes



Presentation skills

Communication, storytelling and quality of the slides will be also considered for the final evaluation

FINAL PRESENTATION

3–6 pm



Prepare to present your strategy to the jury

- The main deck should be **no longer than 15 slides** excluding appendix The **presentation should last no longer than 10 - 15 minutes, with up to 5 minutes included for potential questions**
- Bear in mind that for this exercise you **will not be evaluated based on if you reach the most optimal solution but on how you present your solution to the jury**, so make sure you work as a team and dedicate enough time to the slides
- **Every team member should speak during the presentation** and the team will be evaluated on their coordination Your presentation should cover the following topics:
 - What is the impact of the promotional programmes on revenue, profit, emissions and the cost of offsetting the emissions ?
 - What was considered as part of the impact assessment of each promotion design and how was this done? What other factors could affect the success of the promotional programmes?
 - How will the customers perceive the promotions?

TOP TIPS FOR THE PRESENTATION



Read everything carefully

Make sure to read the materials carefully and be certain of the definitions behind key metrics used – please ask us if uncertain!



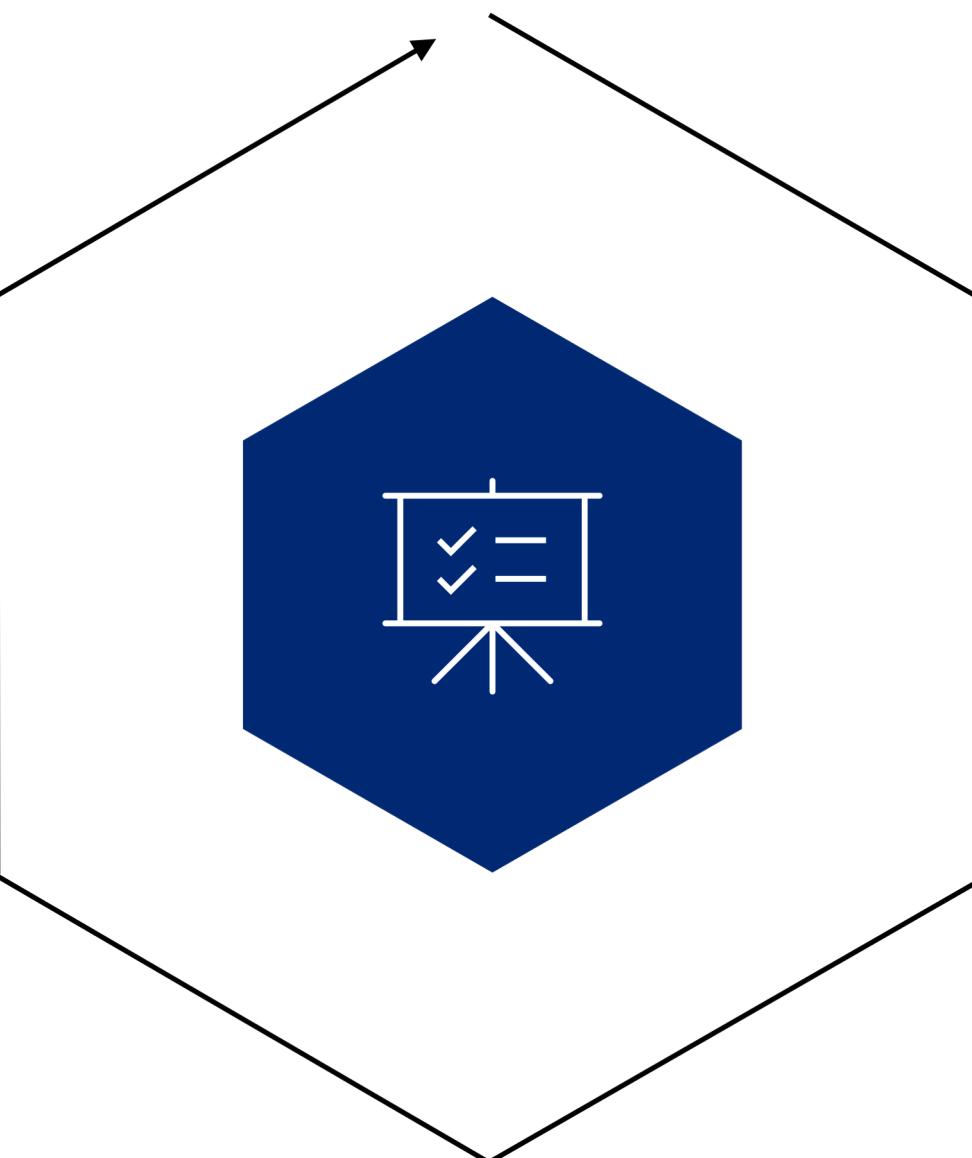
Teamwork is key

The task was designed to be completed as a team, so please split the work to leverage all of your team's skills



Write a storyline

Ensure that you have a storyline for presenting including who is presenting which sections and what you are trying to convey in each slide



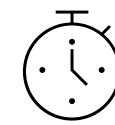
Support your slides with charts

Be as visual as possible in presenting and convey the important information



Put yourself in the client shoes

Think about what the client wants to know and what impact they care about



Organize the time given

Time box yourself for tasks e.g. leave sufficient time to rehearse the presentation and submit materials

3.

Team assignments

TEAM ALLOCATIONS

A



- XXX

B



- XXX

Appendix

A.

Datasets available

2024 MONTHLY SALES FORECASTING (MONTHLY_SALES_FORECAST.CSV)



- This dataset is an aggregation of forecasted baseline sales data up to a product level. It contains summary information about the estimation of actual sales and units for 2024.

Column	Description
ProductKey	Product identifier
TransactionMonth	Month of projected sales
Estimated Unit Volume	Predicted units sold per month
PredictedPrice	Price per unit of product
Estimated Sales	Estimated monthly sales

PRODUCT (PRODUCT_TABLE.CSV)



This dataset details the unique products within the product category of interest, their sub-category and descriptive information including brand, supplier, elasticity and margin per unit

Column	Description
ProductKey	Product identifier
BrandKey	Brand identifier
SupplierKey	Supplier identifier
Category1	Main category to which the product belongs
Category2	Subcategory to which the product belongs
Elasticity	Elasticity associated to the product
Margin	Margin associated to the product

PRODUCT CATEGORY (PRODUCT_CATEGORY_TABLE.CSV)



This dataset details the different product categories that the retailer commercializes with and what is the carbon footprint of the different items

Co lu mn Pr o du ctCa te gor y_ Lvl1 Pr o du ctCa te gor y_ Lvl2 Es t_Em iss ion _ In t U n its	D es c ri pti on
te gor y_ Lvl1 Pr o du ctCa te gor y_ Lvl2 Es t_Em iss ion _ In t	Main category to which the product belongs
ctCa te gor y_ Lvl2 Es t_Em iss ion _ In t	Subcategory to which the product belongs
U n its	Estimated emission intensity for the subcategory per unit of product sold
	Units of the emission intensity estimation

BRANDS (BRAND_TABLE.CSV)



This dataset details the unique brands for the different offered products and their individual information regarding emission intensities on the manufacturing process

Co lu mn	D es c ri pti on
BrandKey	Brand identifier
Es t_Emission_ Int	Certified emission intensity due to manufacturing provided by the brand per unit of product sold
U n its	Units of the emission intensity

SUPPLIER (SUPPLIER_TABLE.CSV)



This dataset details the different suppliers that the retailer uses and the emission intensities associated with the production chain

Column	Description
SupplierKey	Supplier identifier
Distance	Distance travelled by the supplier (in miles)
Est_Emission_Inf	Estimated emission intensity for the route of the supplier per unit of product sold
Units	Units of the emission intensity estimation

b.

Submission guidance

SUBMISSION GUIDANCE



- Slides must be shared in a single PowerPoint file in English language so they can be used later in the final phase for the live presentation
- Slides should use the Oliver Wyman blank template provided
- The file should be named as: "YYYYMMDD – [TEAM NAME] – HackAtOW Final Presentation.xlsx"

Deadline to submit the deliverable is 1pm CET on Friday 21st April. Deliverables should be submitted by email to ow.europe.hackatow@oliverwyman.com

Sign up & Register



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Good Luck!



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(please fill both)



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