

CASE STUDY-2

CATALOG CROSS SELLING

**An implementation of Affinity Analysis &
Apriori Algorithm**

SUBMITTED BY: TEAM CAPSTONE COMMANDERS

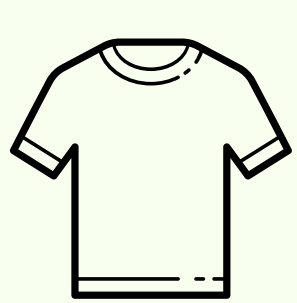
Batuhan, Esha, Hitesh, Paarit, Phu, Reshma

KEY POINTS TO COVER

- **Introduction & Objective**
- **Solution Approach**
- **Scenarios**
- **Recommendations**
- **Measures of Success**

INTRODUCTION

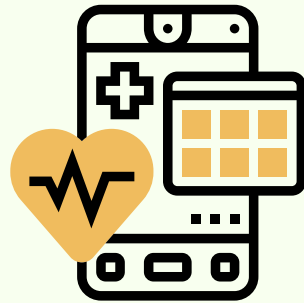
Exeter, Inc. is a catalog firm that sells products in a number of different catalogs that it owns.
There are nine catalog categories :



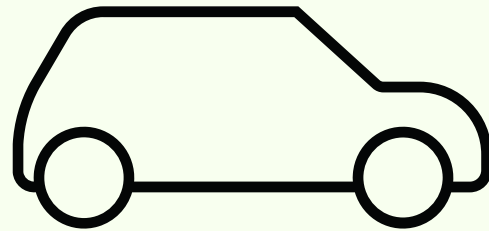
Clothing



Houseware



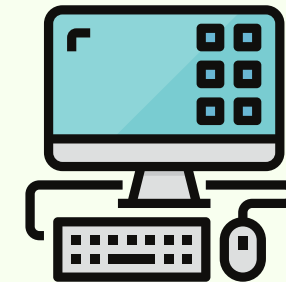
Health



Automotive



Electronics



Computers



Garden



Novelty gift



Jewellery

OBJECTIVE

OUR FOCUS

Find out what
to cross sell?



SOLUTION APPROACH

FREQUENT ITEMSETS

F

Find items that are purchased together at least 5% of the times in most transactions

Minsup = 0.05

ASSOCIATION RULES BY CONFIDENCE

Form rules based on confidence assuming that Item Y is purchased 50% of the times given that Item X has already been purchased

Min Threshold = 0.5

FILTERING RESULTS BY LIFT

Sort the rules in descending order based on Lift. Assuming Lift ≥ 1 , means that Item Y is as likely to be purchased as Item X provided the latter has been already bought

Lift ≥ 1

ANALYZE & RECOMMEND

Analyze 3 scenarios with 2 minimum consequents and provide recommendations based on them

Consequents ≥ 2

SCENARIOS & RECOMMENDATIONS

- CUSTOMER BUYS 1, EXETER CROSS-SELLS 2 (CAMPAIGN B₁C₂)
- CUSTOMER BUYS 2, EXETER CROSS-SELLS 2 (CAMPAIGN B₂C₂)
- CUSTOMER BUYS 3, EXETER CROSS-SELLS 2 (CAMPAIGN B₃C₂)

CUSTOMER BUYS 1, EXETER CROSS-SELLS 2

(CAMPAIGN B1C2)

- Items purchased together atleast 9% of the times are shown on the left. Two Itemset which are most popular are:

1. Electronics, Houseware & Health Products

2. Jewellery, Houseware & Health Products

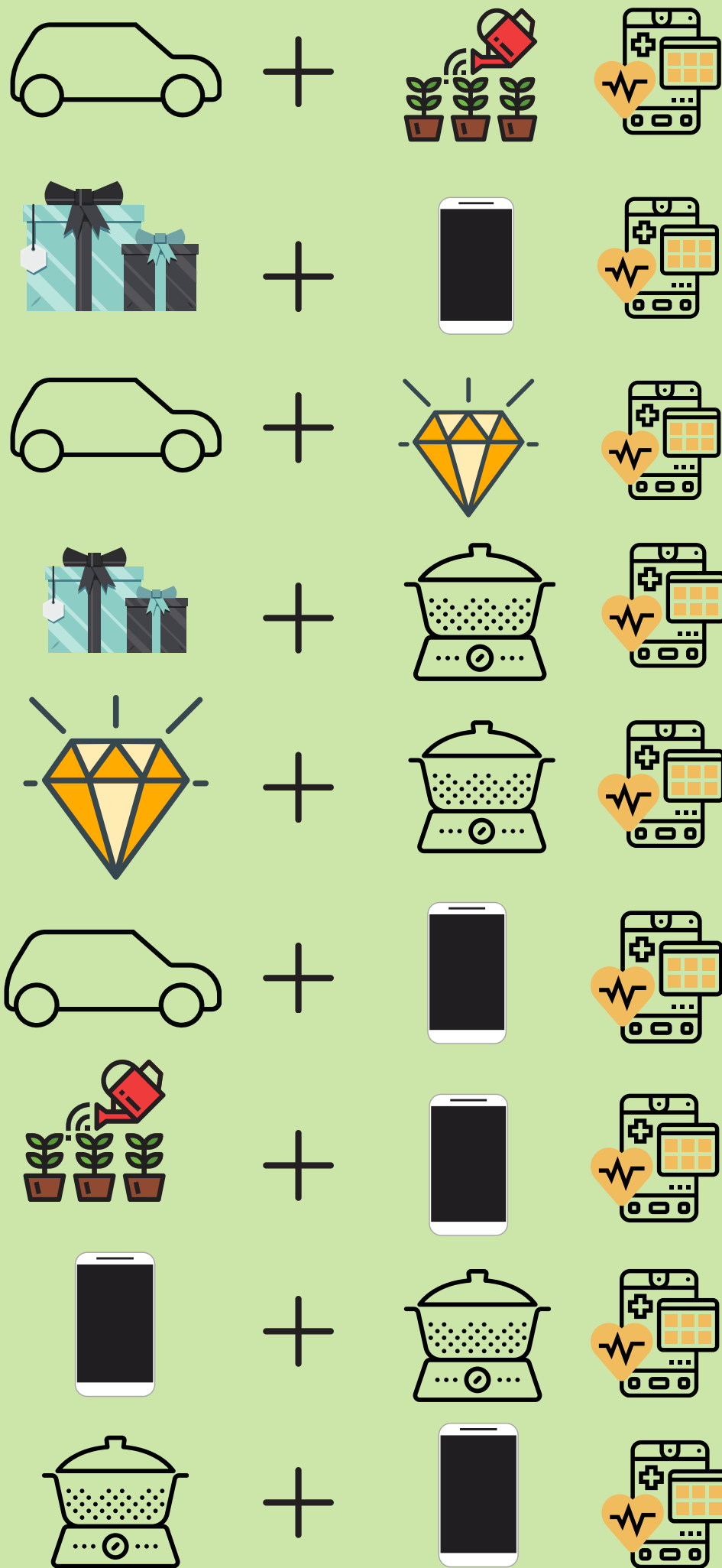
- Health Products & Electronics are purchased atleast 60% of the times or they are 1.3 times are more likely to be bought given the following items have been already purchased:

1. Novelty Gifts

2. Automotive

3. Garden Products

4. Houseware

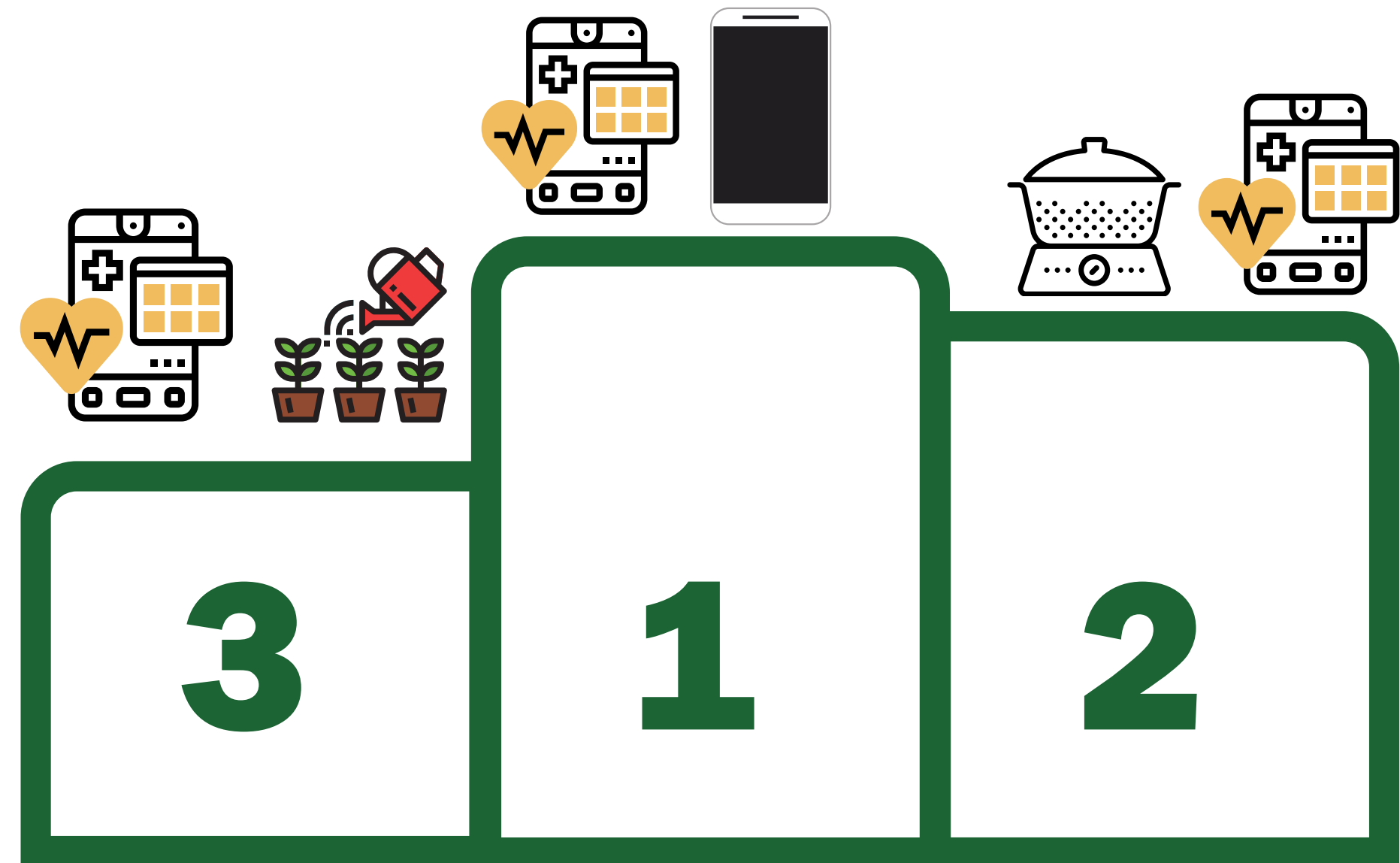


(CAMPAIGN B1C2)

Email or ship discount coupons for the following catalogs together:

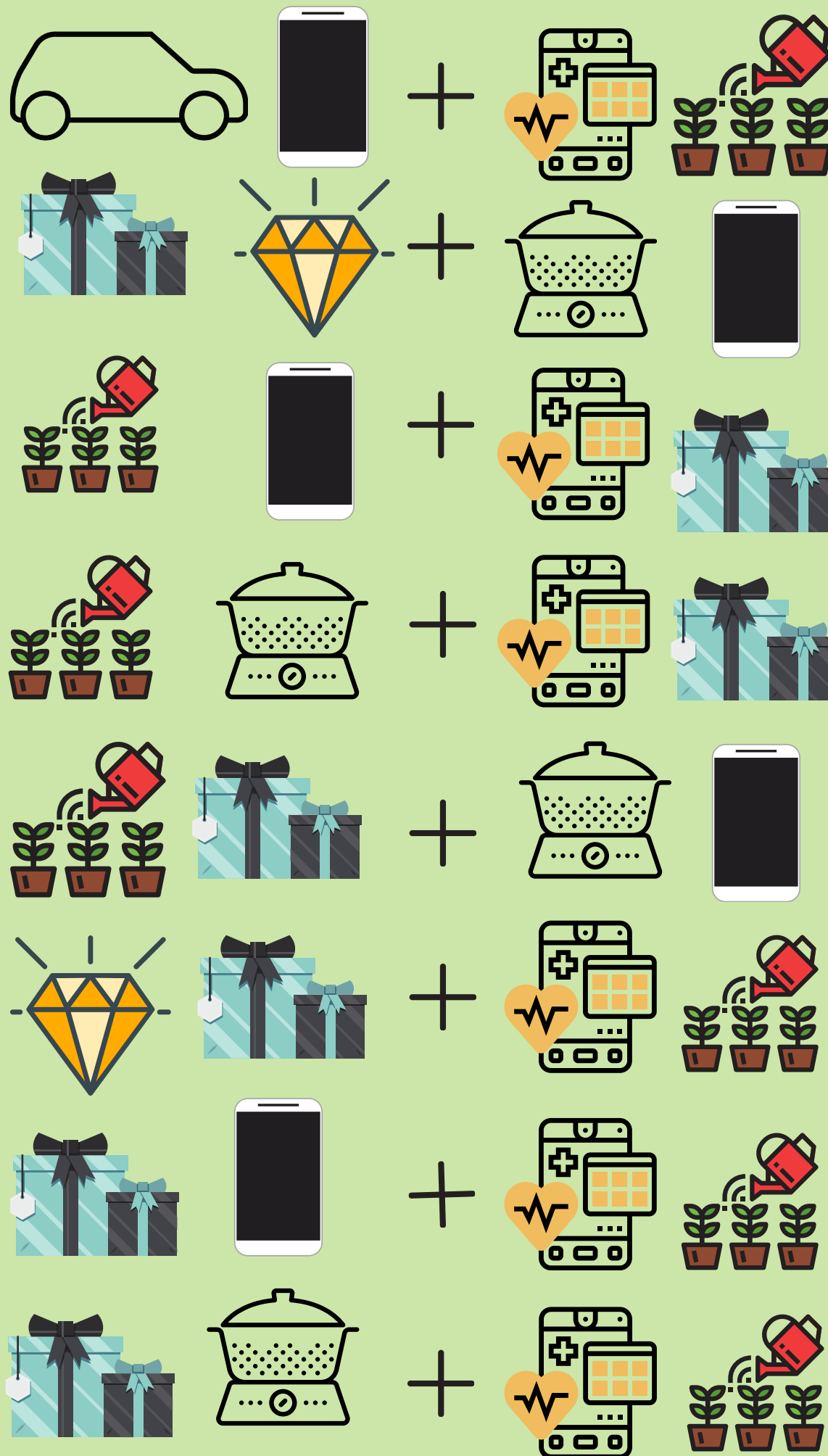
- **Health Products & Electronics**
- **Health & Houseware Products**
- **Health Products & Garden Products**

RECOMMENDATION



CUSTOMER BUYS 2, EXETER CROSS-SELLS 2

(CAMPAIGN B2C2)



- Items purchased together atleast 6% of the times are shown on the left. Two Itemset which are most popular are:
 1. Electronics, Novelty Gifts, Garden & Health Products
 2. Houseware, Novelty Gifts, Garden & Health Products
- Health Products & Garden Products are purchased atleast 50% of the times or they are twice more likely to be purchased when the following combos have already been purchased:
 1. Automobile & Electronics,
 2. Jewellery & Novelty Gifts,
 3. Electronics & Novelty Gifts,
 4. Houseware & Novelty Gifts

(CAMPAIGN B2C2)

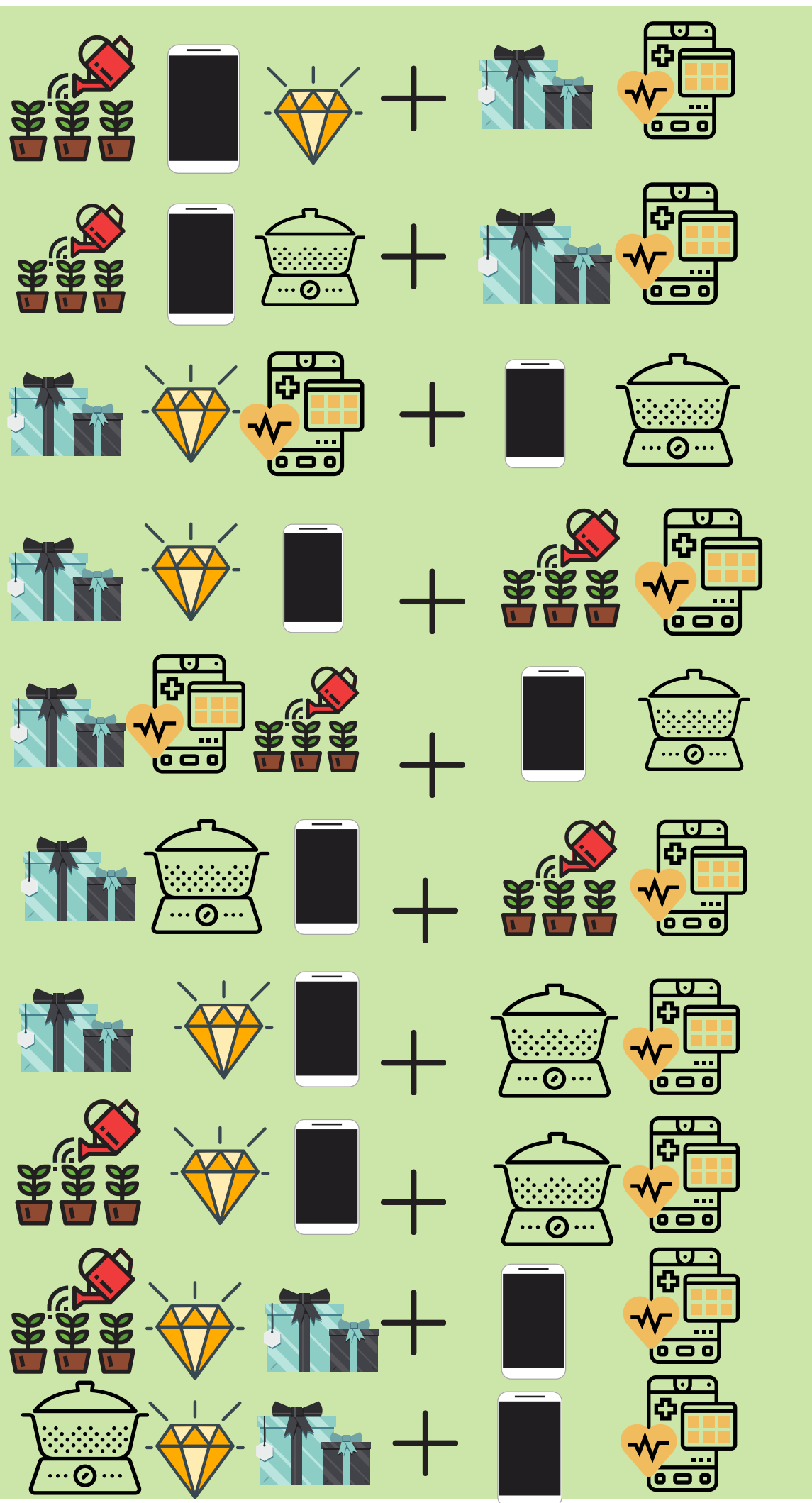
Customers who buy 2 products can be sent discount coupons from the following 2 catalogs.

(Arranged from most sale- inducing to the least):

- **Health & Garden Products**
- **Houseware & Electronics**
- **Health & Novelty Gifts**

RECOMMENDATION





CUSTOMER BUYS 3, EXETER CROSS-SELLS 2 (CAMPAIGN B₃C₂)

- Items purchased together atleast 5.3% of the times are shown on the left. Two Itemset which are most popular are:
 1. Novelty Gifts, Health Products, Electronics & Houseware, Jewellery
 2. Novelty Gifts, Health Products, Electronics, Houseware & Garden Products
- Novelty Gifts & Health Products are 2.5 twice more likely to be purchased when the following combos have already been bought:
 1. Garden Products, Electronics & Jewellery
 2. Garden Products, Electronics & Houseware

(CAMPAIGN B₃C₂)

Customers who buy 3 products can be sent discount coupons from the following 2 catalogs together.

(Arranged from most sale-inducing to the least):

- **Novelty Gifts & Health Products**
- **Houseware & Electronics**
- **Garden & Health Products**

RECOMMENDATION



MEASURES OF CAMPAIGN SUCCESS



Compare the following for 3 campaigns

(On 31st Dec' 2020)

Return on Investment (ROI): Sales revenue a campaign brings on every dollar spent

Cost per Win (Sale): It measures the expense of each sale

Conversion Rate: Percentage of targeted audience who have converted into leads or customers

Incremental Sales: Measures the contribution of marketing efforts toward the sales numbers



THANK YOU

Any Questions?

