OLIVE SUN COHORT 15

RESTAURANT OWNER NEVIGATOR

YELP DATASET CHALLENGE

DATASET

ROUND 7 YELP CHALLENGE DATA

- 2.2M reviews and 519 tips by 552K users for 77K business in 10 cities (Top: Las Vegas & Phoenix)

- 566K business attributes

- Social network of 552K for a total of 3.5M social edge

- Aggregated check-ins over time for each of the 77K businesses

- 200,000 pictures from the included business

MARKETING SOLUTION

SELECTIVE TARGETED IMPRESSIONS
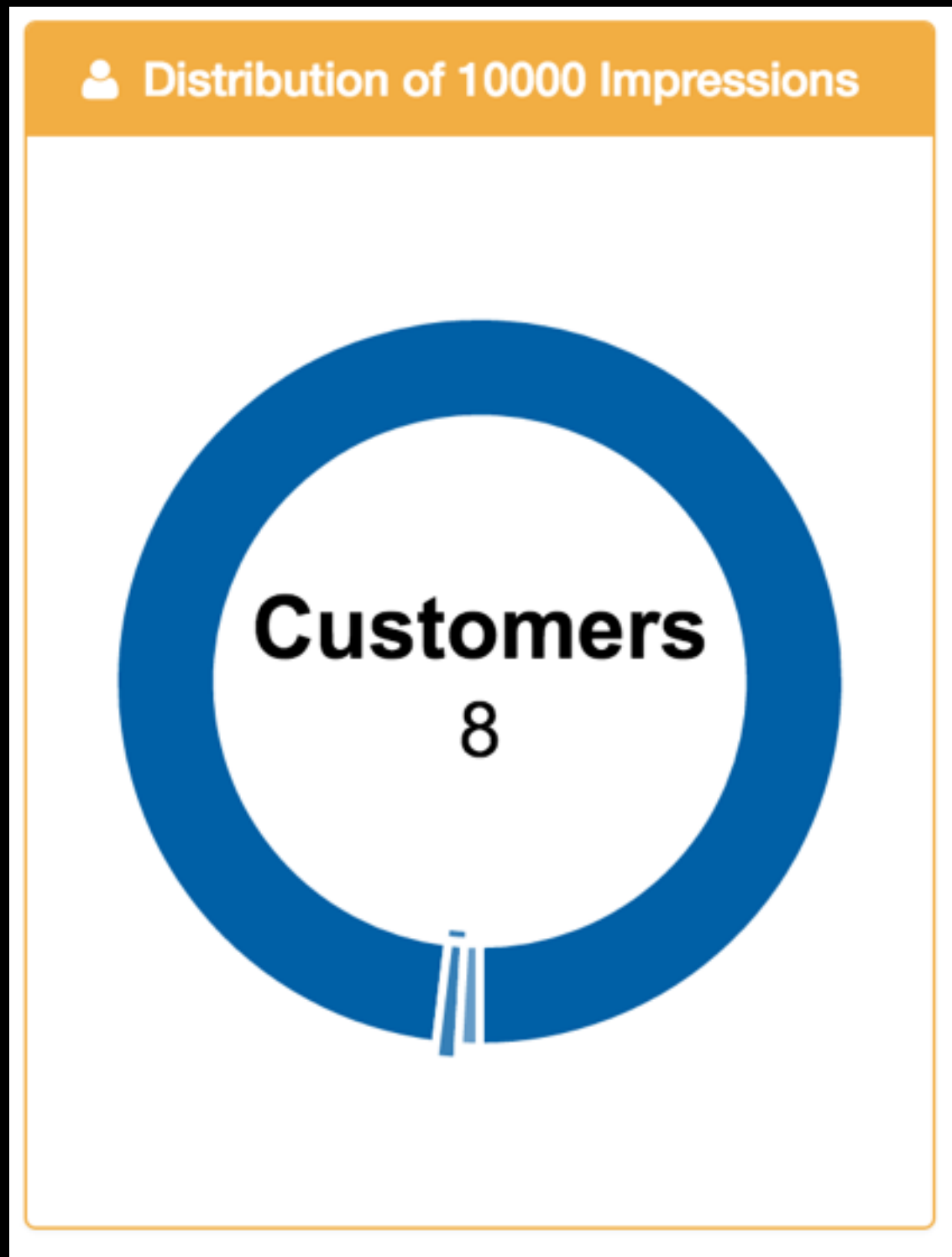
CURRENT YELP MARKETING PLAN
$1000 FOR 10000 IMPRESSIONS

Distribution of 10000 Impressions

Non Customers
9,990

- 2% Click Through Rate

- 5% Conversion Rate

- 20% Customers leave reviews

CURRENT YELP MARKETING PLAN
$1000 FOR 10000 IMPRESSIONS

Distribution of 10000 Impressions

Customers
8

- 2% Click Through Rate

- 5% Conversion Rate

- 20% Customers leave reviews

CURRENT YELP MARKETING PLAN
$1000 FOR 10000 IMPRESSIONS

Distribution of 10000 Impressions

Reviewers
2

- 2% Click Through Rate

- 5% Conversion Rate

- 20% Customers leave reviews

ALTERNATIVE: $3.27 PER CLICK

SCHEME	BY IMPRESSION	BY CLICK
COST	$1000	$327
PRODUCT	10000 Impressions	100 Clicks
$/ IMPRESSION	5	3.27
$/CUSTOMER	100	65
$/REVIEWER	500	327

- 5% Conversion Rate

- 20% Customers leave reviews

- Identify people who gave your 4+ ratings

- Find out who are similar users to these people:

  - similar users are those who share N+ number of restaurants they left 4+ ratings to

  - N ranging from 5 to 10 are tried in model

N same liked

USER 1

USER 2
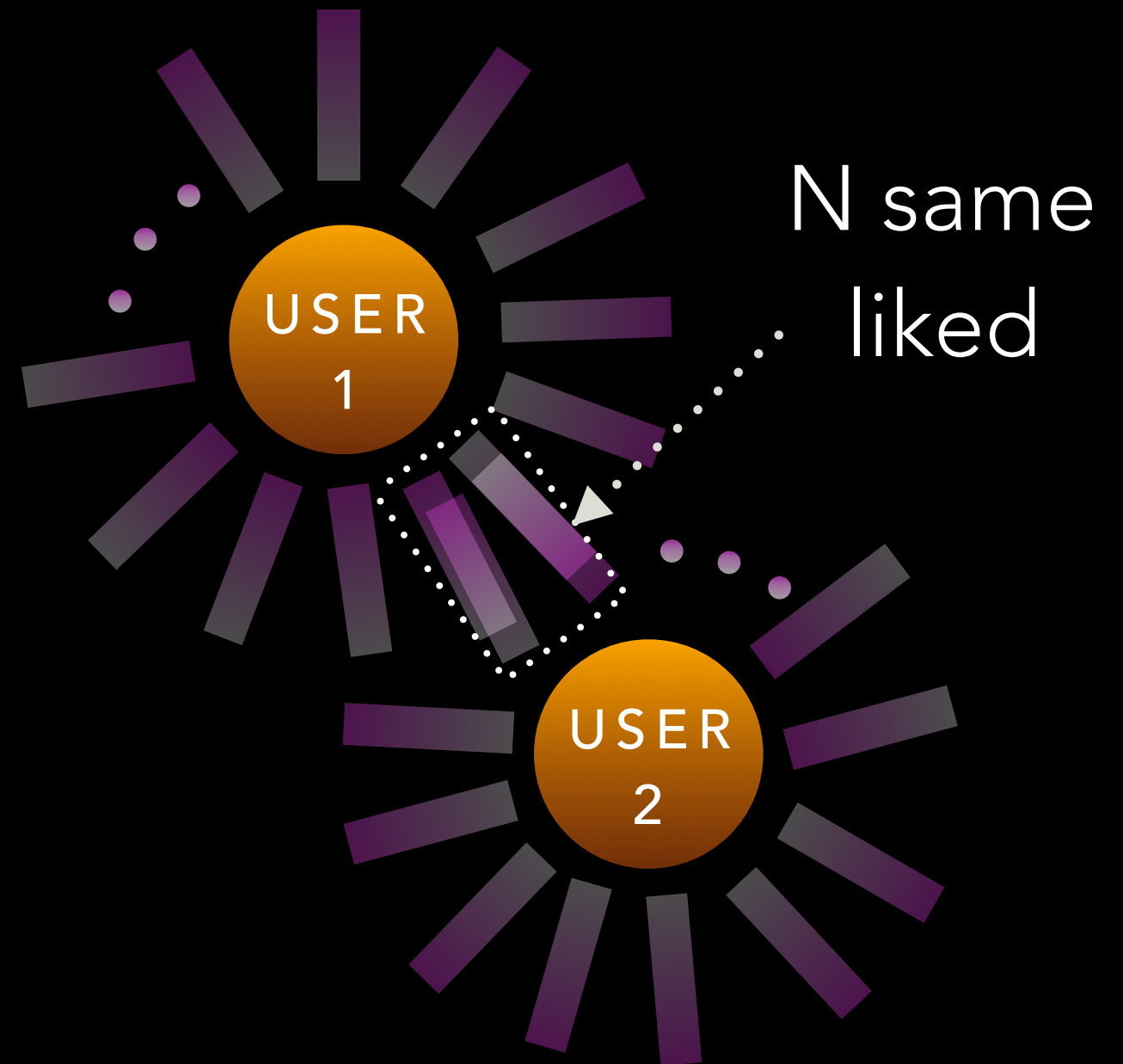
FINDING SIMILAR USERS:
N = 5,6,7,8,9

Las Vegas

no. Shared Liked	x Regular Customers	% Reviewers Indentified	% Actual Reviewers
Baseline	1.00	N/A	0.12%
5+	3.58	7.58%	0.41%
6+	4.45	6.31%	0.52%
7+	5.22	5.29%	0.61%
8+	6.17	4.52%	0.72%
9+	7.69	3.89%	0.90%
10+	8.74	3.39%	1.02%

Phoenix

no. Shared Liked	x Regular Customers	% Reviewers	% Actual Reviewers
Baseline	1.00	N/A	0.25%
5+	2.90	8.30%	0.73%
6+	3.36	6.61%	0.85%
7+	3.87	5.44%	0.98%
8+	4.36	4.67%	1.10%
9+	4.76	4.06%	1.20%
10+	5.37	3.62%	1.35%

8+
times of baseline: 4.36
% identified: 4.67
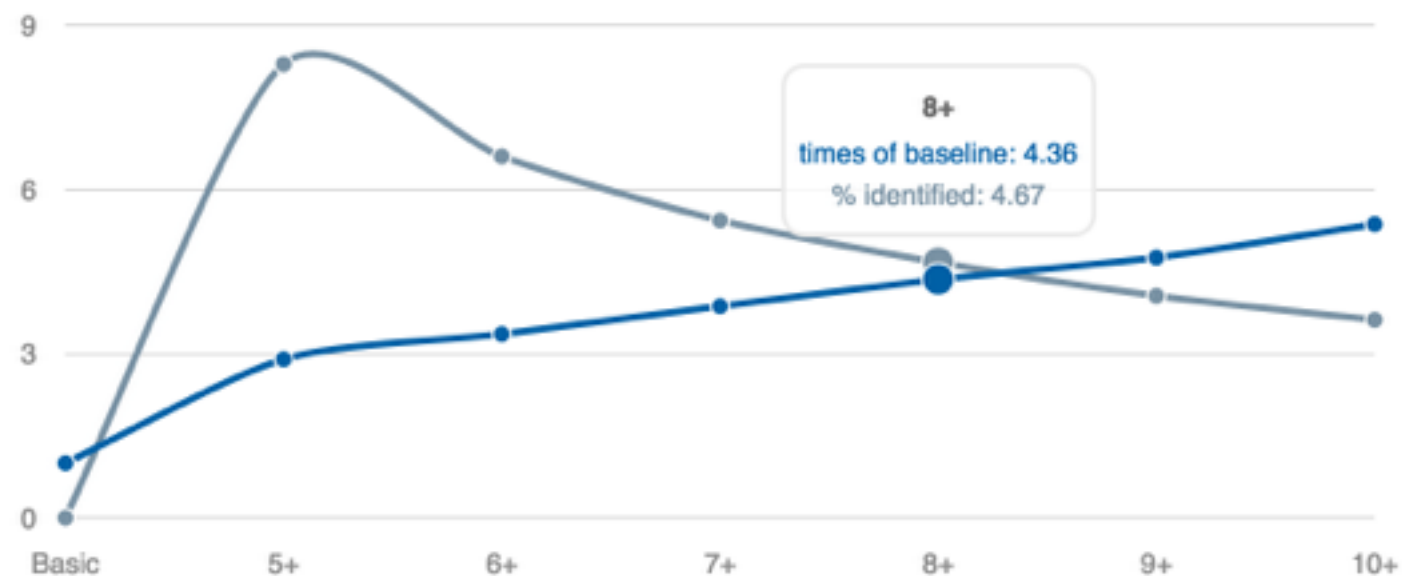
SELECTIVE IMPRESSION ON SIMILAR USERS

SCHEME	BY IMPRESSION	BY CLICK	5+ SIMILARITY	10+ SIMILARITY
COST	$1000	$327	$1000	$1000
PRODUCT	10000 Impressions	100 Clicks	10000 Selective Impressions	10000 Selective Impressions
$/ CLICK	5	3.27	1.73	0.93
$/CUSTOMER	100	65	35	19
$/REVIEWER	500	327	173	93
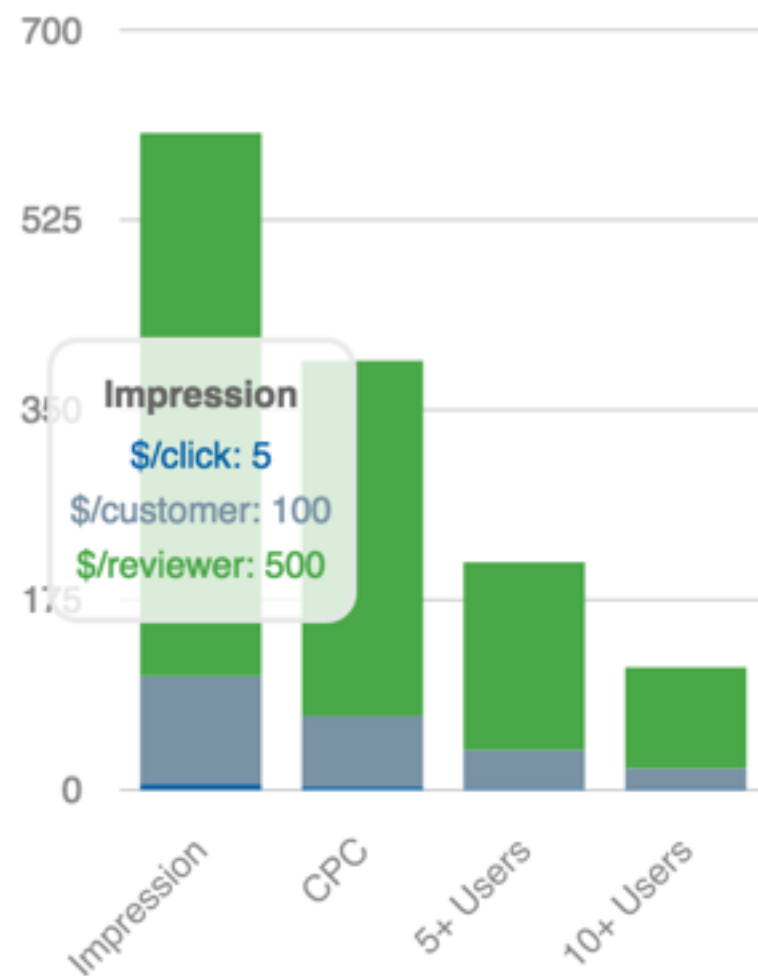
SELECTIVE IMPRESSION ON SIMILAR USERS
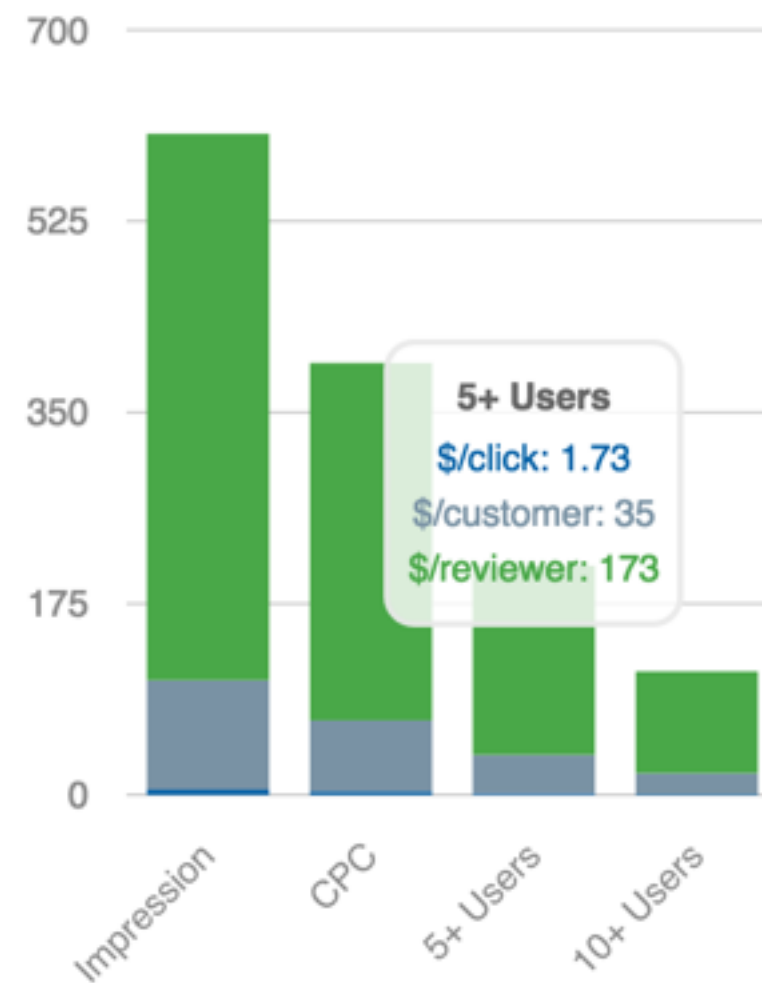
IMPROVEMENT SOLUTION

KNOW AND IMPROVE FOOD ITEMS THAT ATTRACTED BAD REVIEW

BAD REVIEW ANALYSIS

- NMF model to find out topics in the 1-2 star reviews

- Aspect: food items in the topics

- Sentiment Analysis: find out negative sentences describing the aspects

- Extract negative sentences for the aspects from original reviews

- tools used: NMF topic modelling , TextBlob POS tags & Sentiment Detection

- Demo

NMF Topic Modelling

['location', 'sushi', 'horrible', 'slow', 'friend', 'soup', 'hotdog'
'atmosphere', 'drinks', 'hot', 'food', 'service', 'minutes', 'probably', 'table',
'decent', 'girl', 'really', 'went', 'waitress']

Noun Phrases in bad reviews

Phrases with Aspect(plural, synonym)

['sushi', 'soup on the side', 'super small hotdog', 'good service', 'rude and slow waitress', 'cold drinks', 'lovely atmosphere', 'horrible service', 'irish drink', 'cold soup', 'tall waitress', 'cheap sushi'...]

Exact Sentences with Noun Phrases

<u>but they also served mediocre sushi.</u>
<u>soup on the side was very small and too creamy,</u>
<u>I also had this super small hot dog, did not worth it</u>.
The only thing good about it was the good service.
<u>Waitress was rude and slow.</u>
We went for celebration for its lovely atmosphere.
<u>totally horrible services and never again</u>
I had irish drink after work
We especially liked the tall waitress who had an accent
<u>I am a regular for its cheap sushi</u>
<u>Soup was cold when it came to the table</u>

Filter: sentiment detection score

Negative Sentences with Aspect

Summary of Bad Review of Problematic Items

but they also served mediocre sushi.
soup on the side was very small and too creamy,
I also had this super small hot dog, did not worth it.
Waitress was rude and slow.
totally horrible services and never again
I am a regular for its cheap sushi
Soup was cold when it came to the table

Also suggests restaurants close to you
who are doing well in these items