



Predicting SHH Donations

Group 1

Agenda



second harvest
HEARTLAND®

1

Problem Statement

2

Methodology.

3

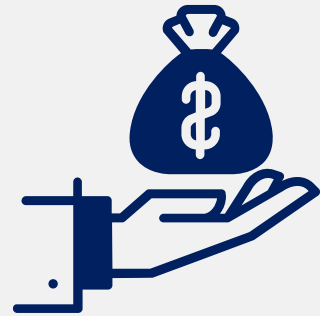
Key Findings

4

Recommendations

Problem Statement

Context



SHH wants to better
prioritize their
resource investment
in earned media
within the next year

Problem



SHH wants to
understand which
media channels and
features make the
largest impact on
donations

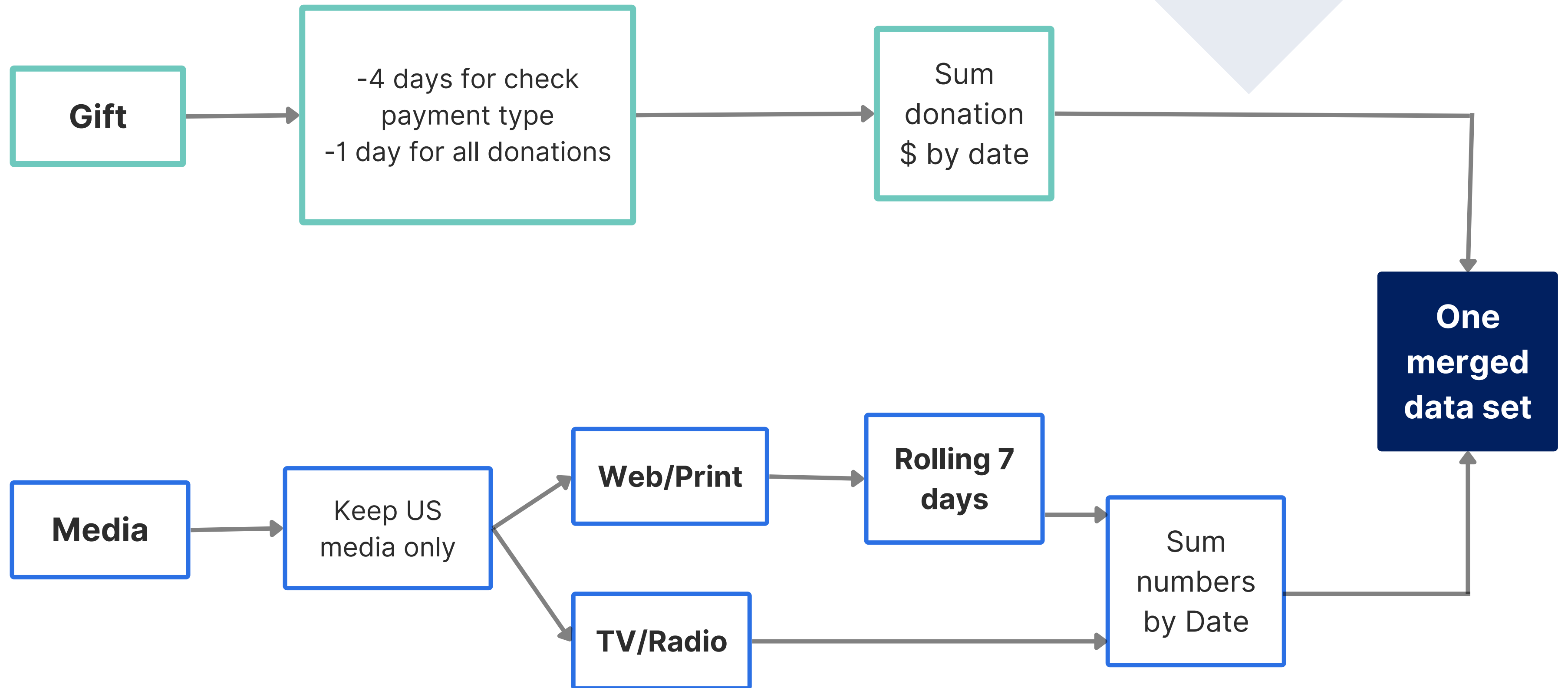
Objective



Conduct analysis to
determine the most
impactful features to
help SHH prioritize
resources and
maximize donations

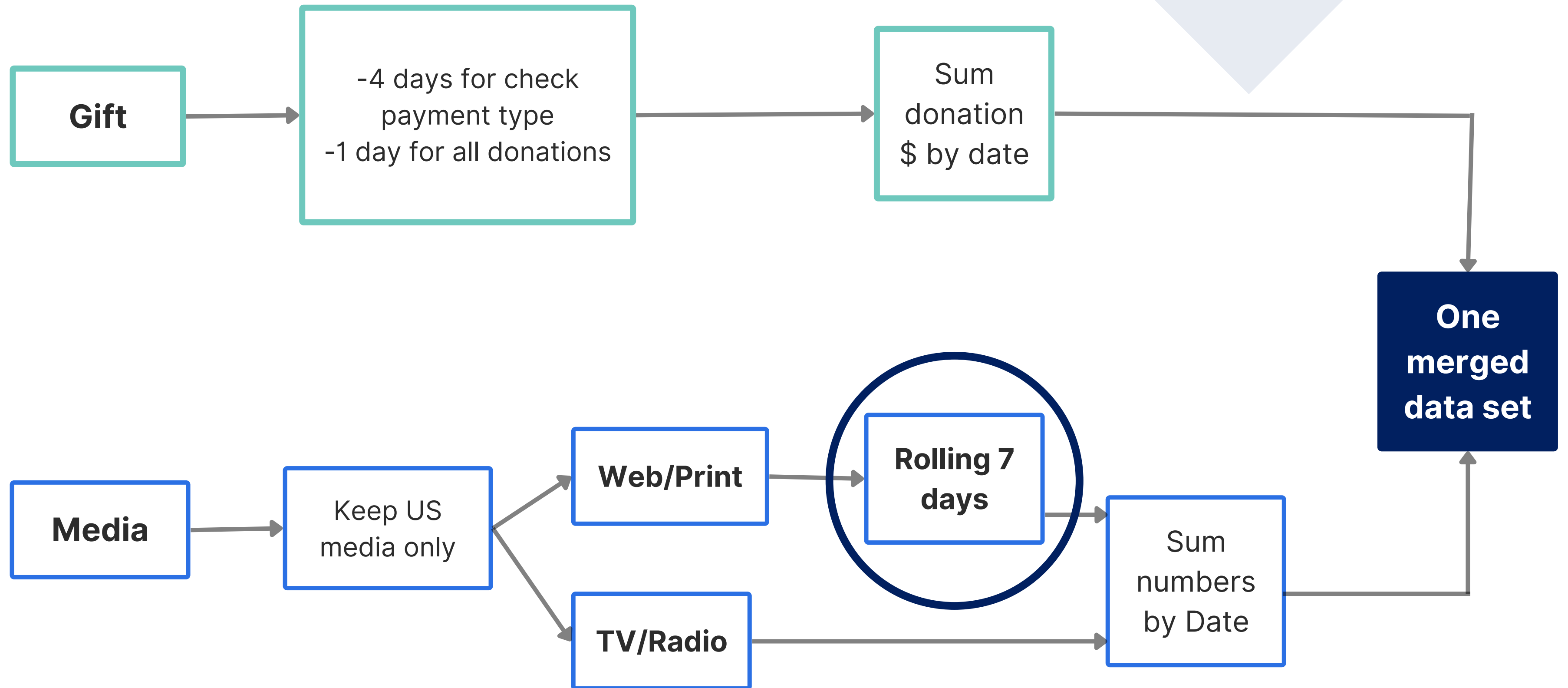
Data Cleaning

Data Aggregation

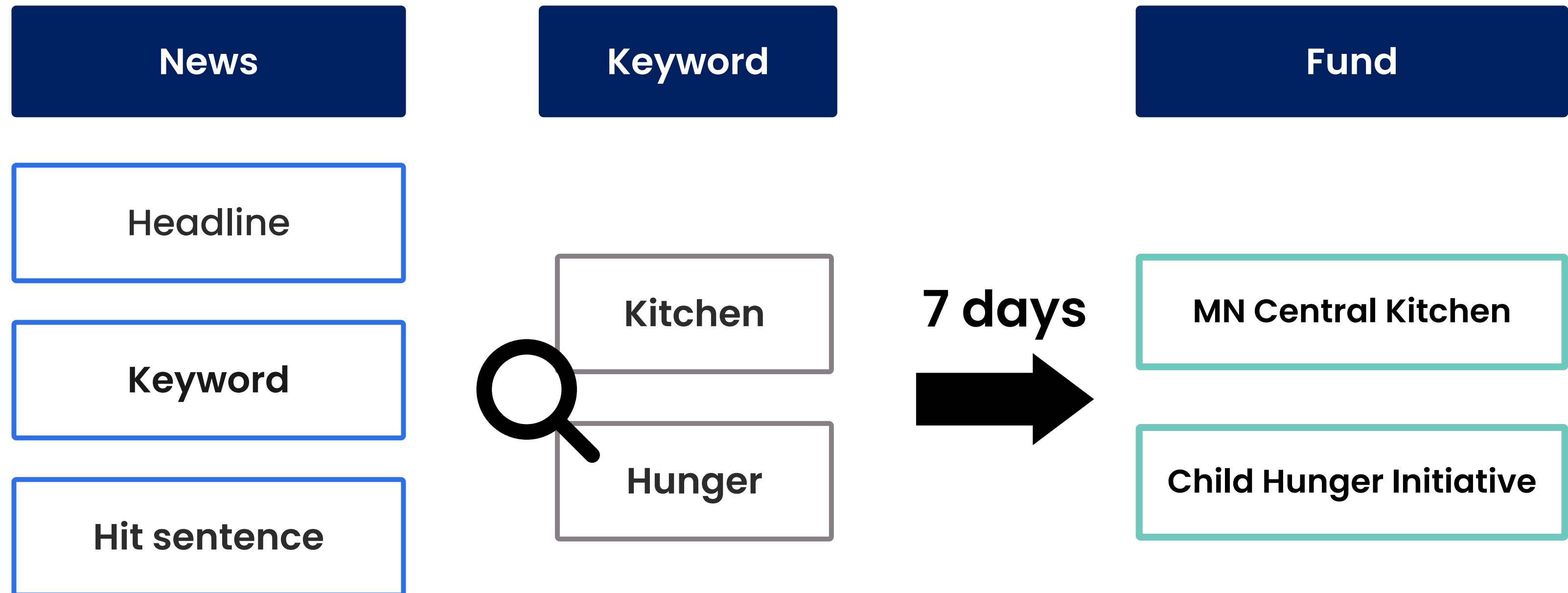


Data Cleaning

Data Aggregation



Donation was made 7 days after a related keyword appeared in a news article.



Key Findings

Web/Print media channels have a larger impact on donation amount than Broadcast (TV/Radio)

01

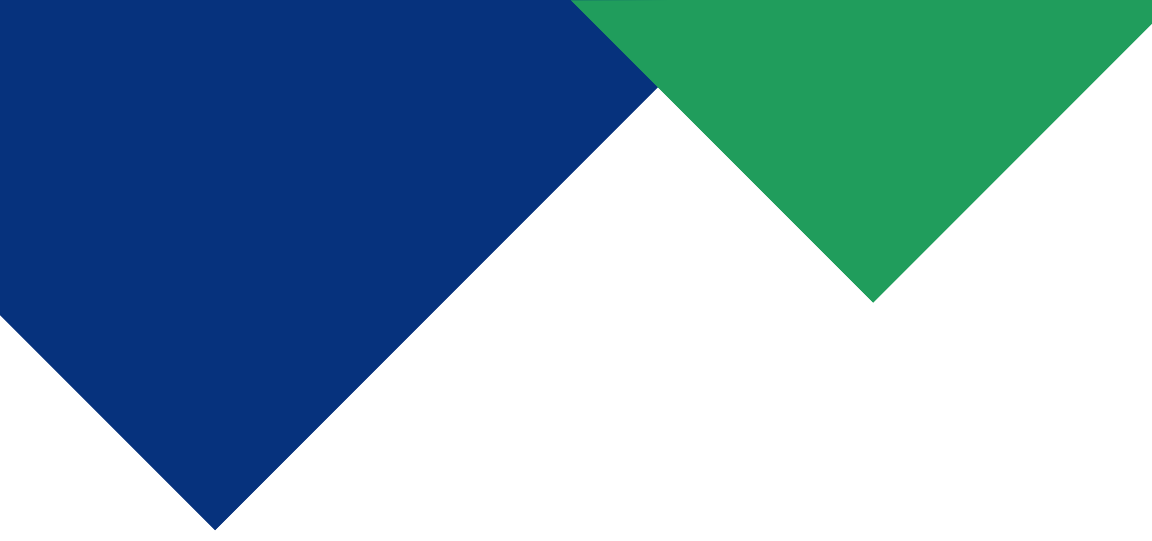
Reach is important, specifically sources having higher mobile reach

02

Facebook echos have a positive impact on the donation amount

03

Twitter echos have a positive impact on the donation amount



Which variables have a statistically significant impact on the donation amount?

–Backward Selection by p-value

Variable Name	p-value
News Number	90.06%
News Desktop Reach	3.94%
News Mobile Reach	8.92%
News Twitter	8.73%
News Facebook	7.00%
News Reddit	13.77%
News Positive	64.81%
News Negative	31.04%
News from Minnesota	68.02%
News from Others	82.76%
Broadcast Number	46.08%
Broadcast Reach	96.93%
Broadcast Neutral	8.87%
Broadcast Positive	52.54%
Broadcast from Minnesota	27.83%

Backwards selection until all the variables are statistically significant with 95% confidence



Variable Name	p-value
Month	0.98%
News Desktop Reach	1.09%
News Mobile Reach	1.15%
News Twitter	3.92%
News Facebook	2.73%

Model selection

WE PREDICT...

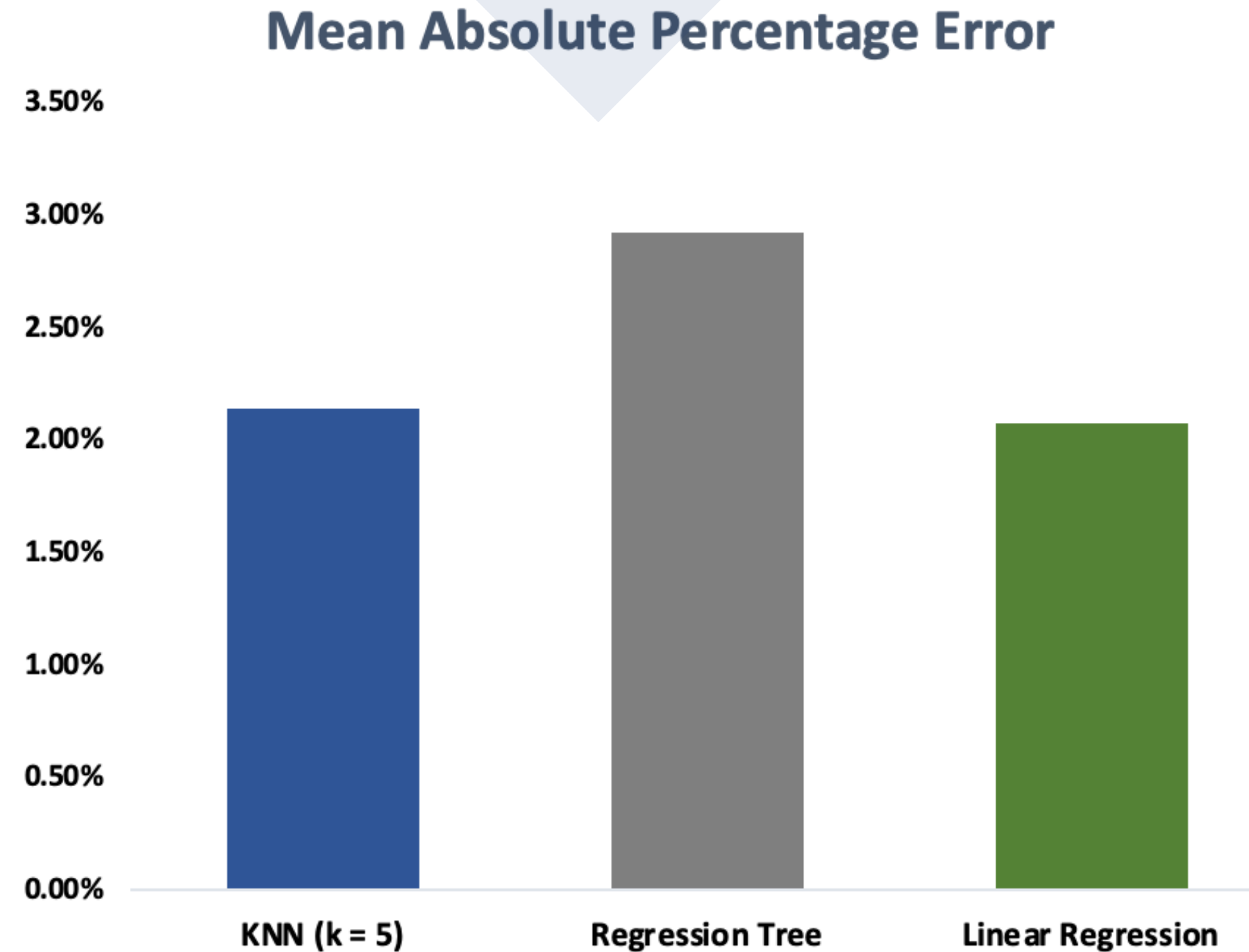
Donation amount generated from different media channels

BASED ON...

Month, News reach in Desktop, mobile, Twitter, Facebook (sum of Rolling 7 days)

WE KNOW...

Linear Regression model prediction is the closest to the actual pattern



The closer MAPE to zero,
the better the predictions

Key Findings

Web/Print media channels have a larger impact on donation amount than Broadcast (TV/Radio)

01

Reach is important, specifically sources that have higher mobile reach

02

Facebook echos have a positive impact on the donation amount

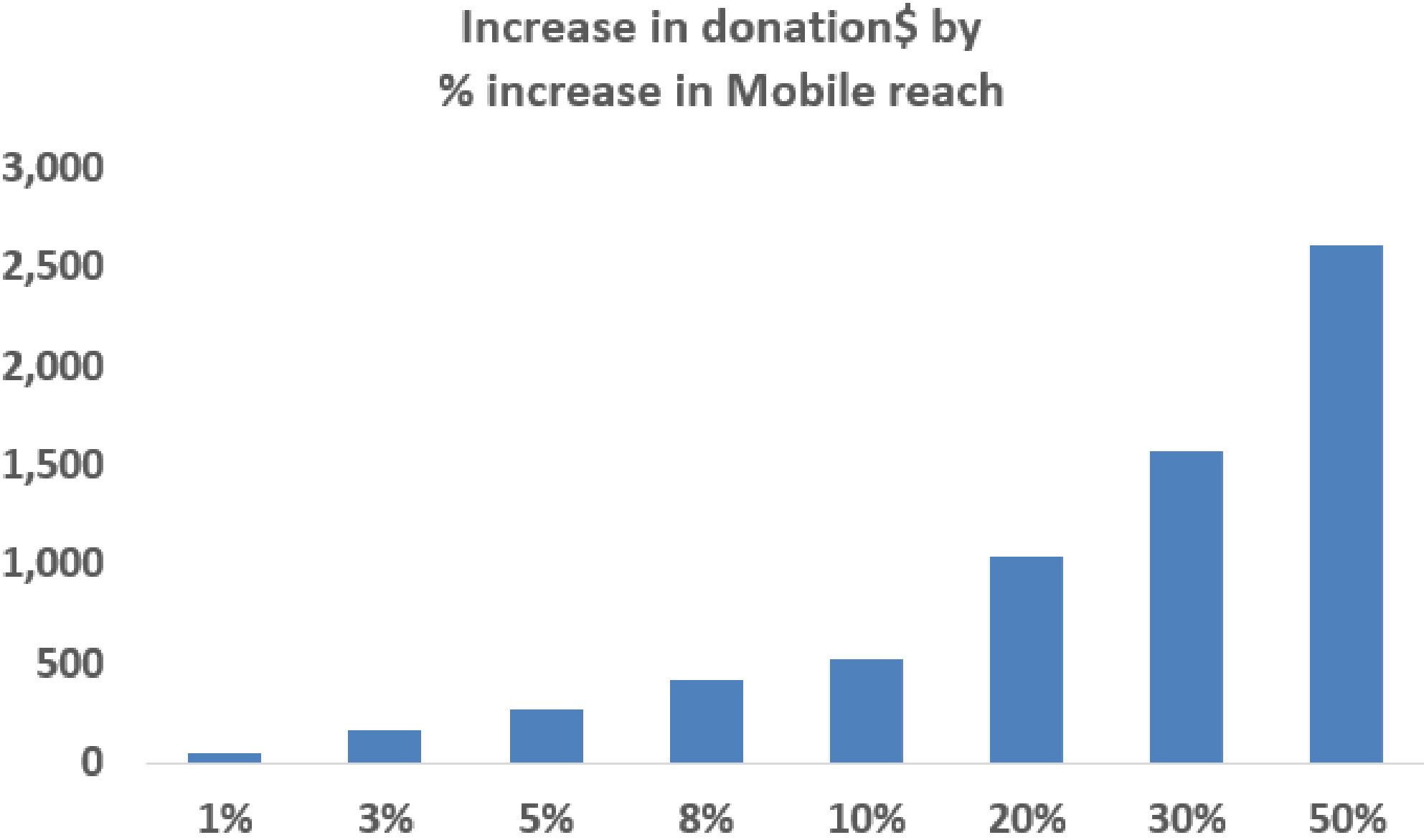
03

Twitter echos have a positive impact on the donation amount

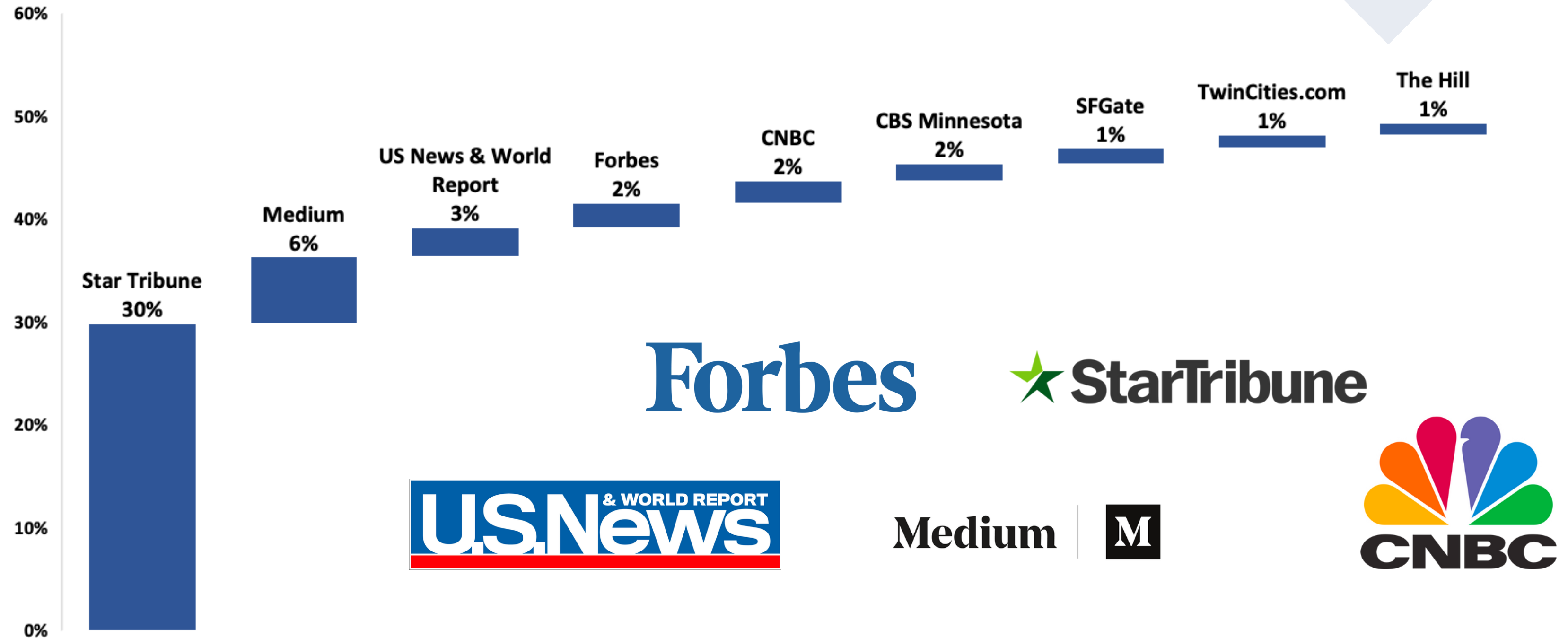


Mobile Reach
↑ 1000 potential viewers = ↑ \$5 donations

01.
In a single month,
a 10% increase in mobile
reach will increase
expected donations by
\$521k



SHH should focus on sources with a high mobile reach



Yahoo News has the highest mobile reach contribution of about 35%, but since SSH feels that its data is unreliable, we have excluded that from the visualization.

Key Findings

Web/Print media channels have a larger impact on donation amount than Broadcast (TV/Radio)

01

Reach is important, specifically sources that have higher mobile reach

02

Facebook echos have a positive impact on the donation amount

03

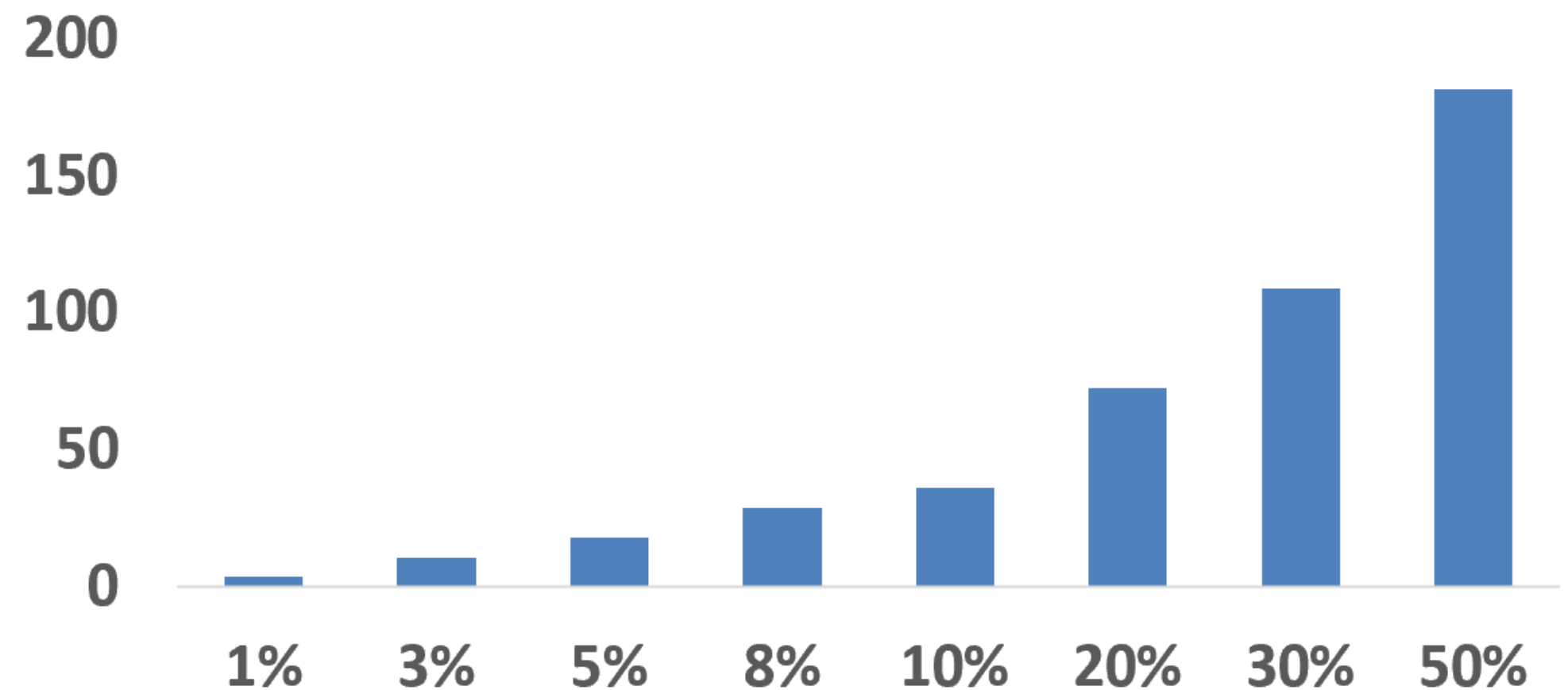
Twitter echos have a positive impact on the donation amount

02.
In a single month,
a 10% increase in
Facebook social echo
will increase expected
donations by \$36.4k

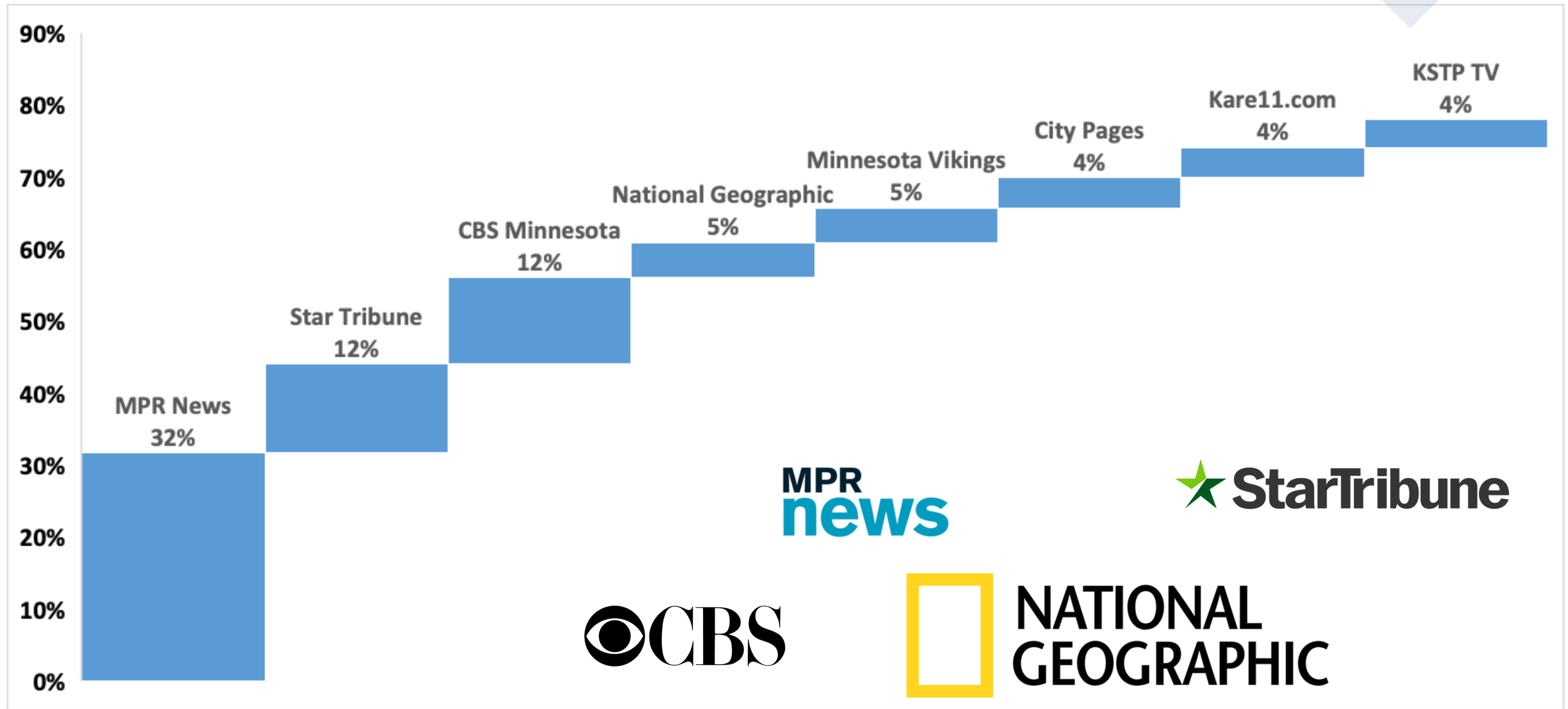
Facebook Social Echo

↑ 1000 social echo = ↑ \$5K donations

Increase in donations\$ by
% increase in Facebook Social Echo



SHH should focus on sources that tend to have high facebook echo



Key Findings

Web/Print media channels have a larger impact on donation amount than Broadcast (TV/Radio)

01

Reach is important, specifically sources that have higher mobile reach

02

Facebook echos have a positive impact on the donation amount

03

Twitter echos have a positive impact on the donation amount

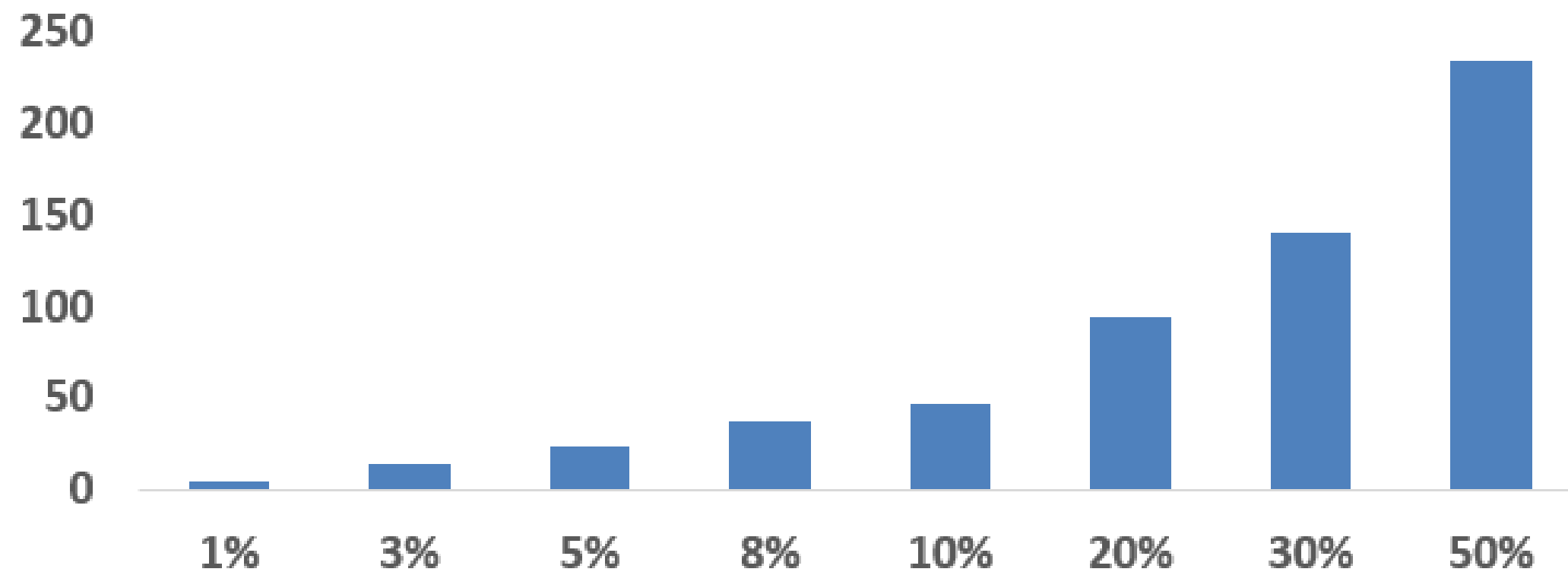
03.

In a single month,
a 10% increase in
Twitter social echo
will increase expected
donations by \$46.6k

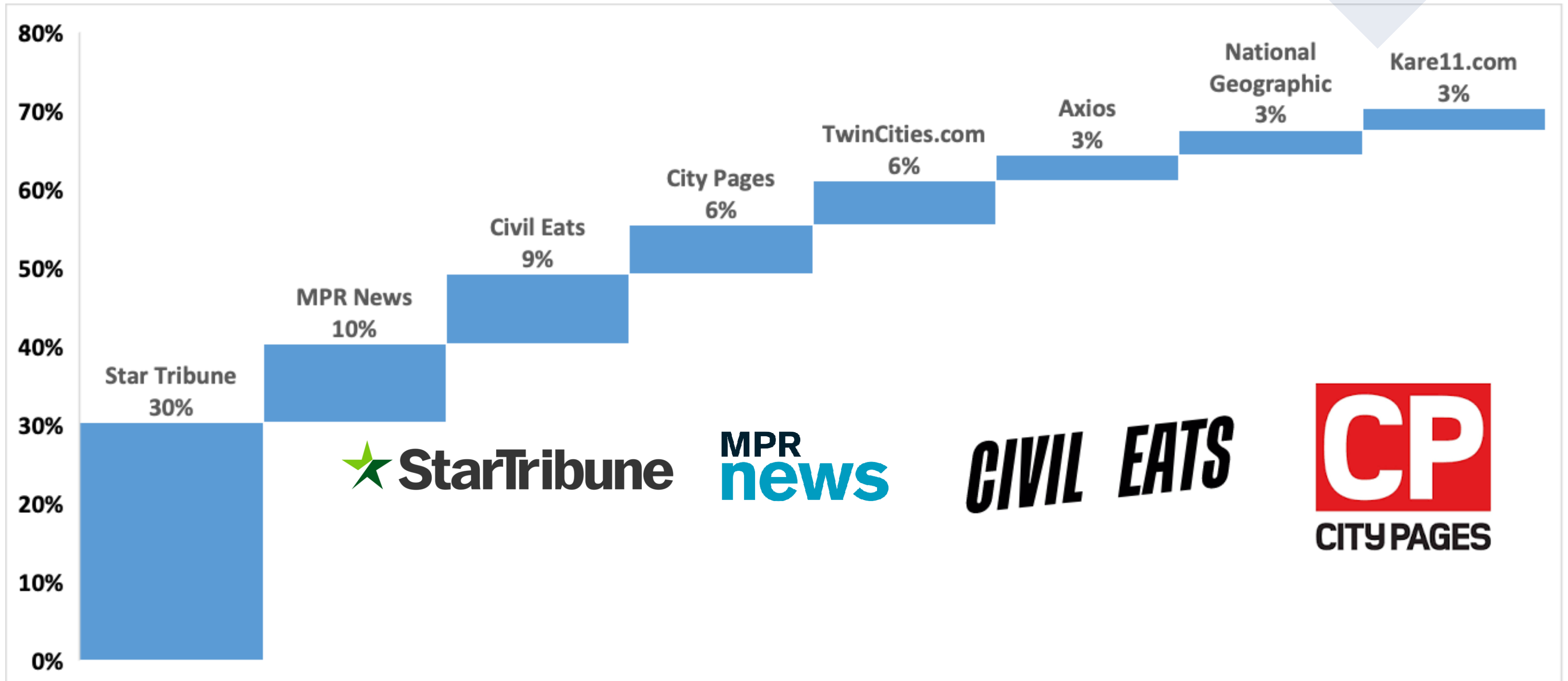
Twitter Social Echo

↑ 1000 social echo = ↑ \$167K donations

Increase in donation\$ by
% increase in Twitter Social Echo



SHH should focus on sources with a high twitter echo



Recommendations

Mobile Reach:

Prioritize sources which have more mobile reach

Facebook & Twitter echos:

Focus on increasing social media presence of articles



Medium



Recommendations

Mobile Reach:

Prioritize sources which have more mobile reach

Facebook & Twitter echos:

Focus on increasing social media presence of articles



CIVIL EATS

Forbes



Medium



MPR
news

Recommendations

Mobile Reach:

Prioritize sources which have more mobile reach

Facebook & Twitter echos:

Focus on increasing social media presence of articles

Increase Twitter & Facebook social media engagement for all media.

- Make comments and respond to comments**
- Start discussions/threads on article topic**
- Encourage followers to comment/like/share/retweet**

Comments & Questions



Narae Kang
kang0234@umn.edu



Pranvi Setia
setia028@umn.edu



Shubham Garg
garg0131@umn.edu



Yun-Chien Yen
yen0029@umn.edu



Rebecca Meyer
meyer2047@umn.edu