



NBA Hackathon

Steel City Statisticians

High Level Overview

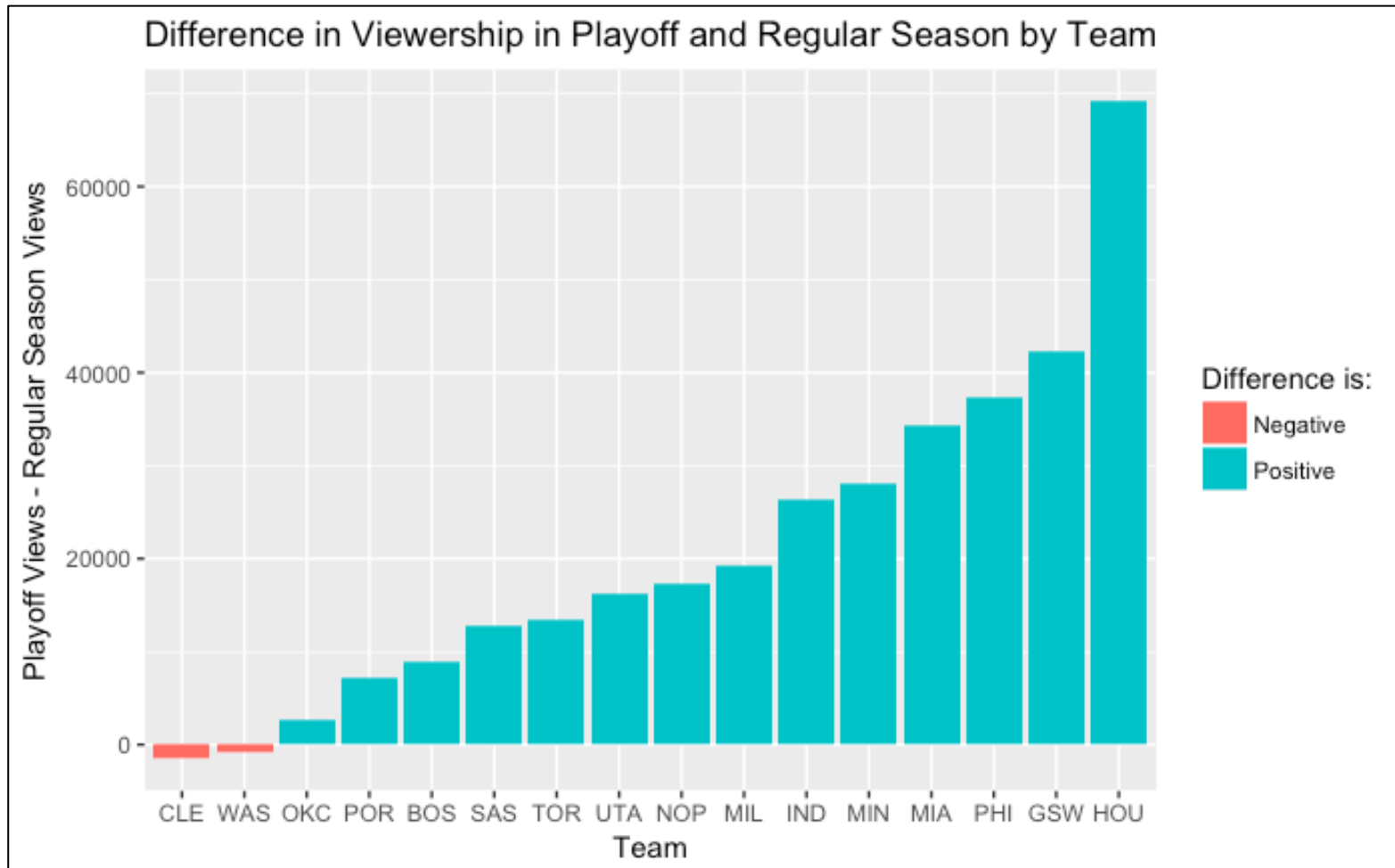


- As each NBA team currently generates value to their current city, instead of relocation, we consider expansion of the league to increase NBA revenue.
- Since playoff games have significantly larger viewership than regular season games, we propose a restructuring of divisions to help increase views and extend the longevity of a playoff series.

Initial Analysis



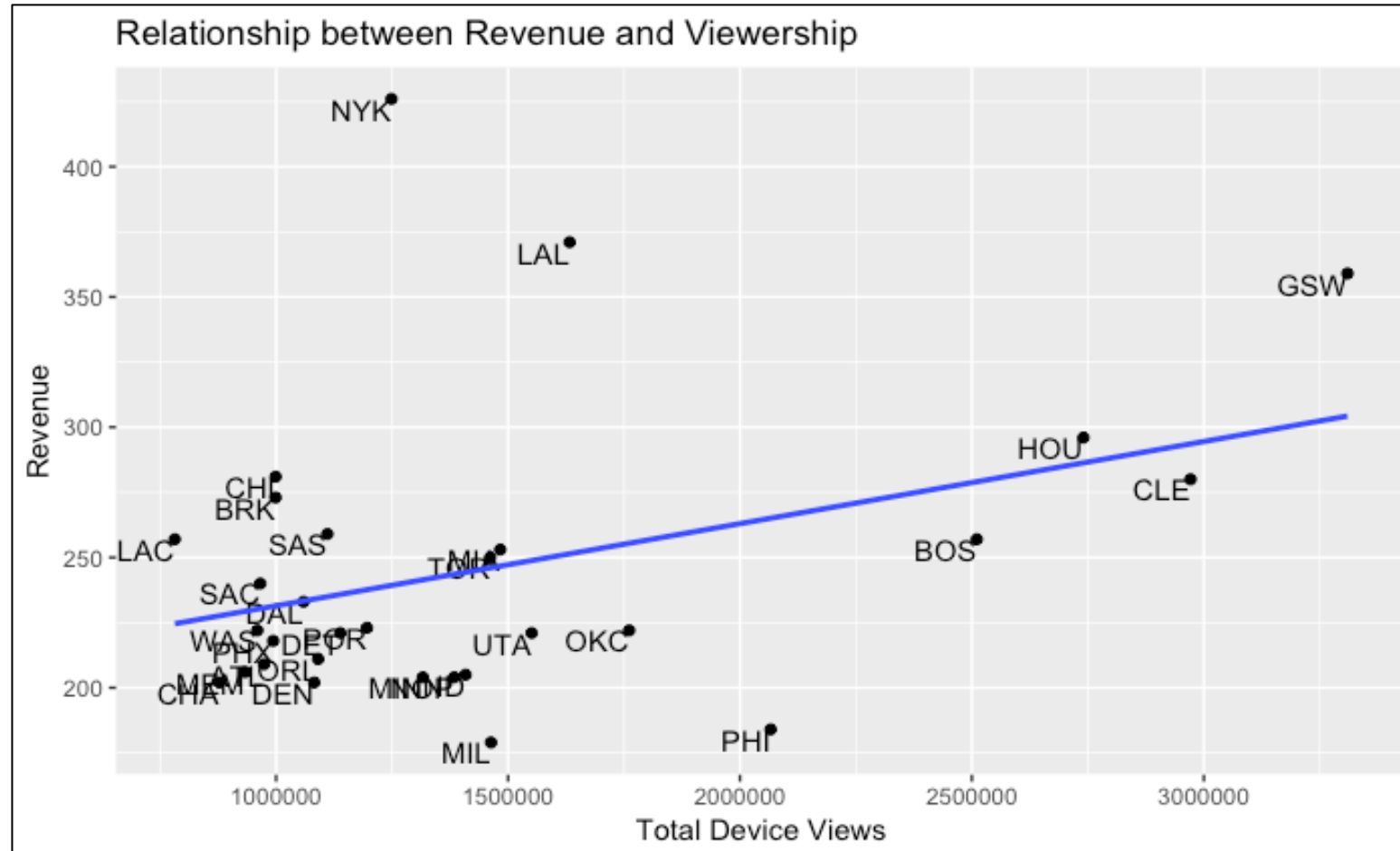
Regular season games exhibit lower viewership than playoff games.



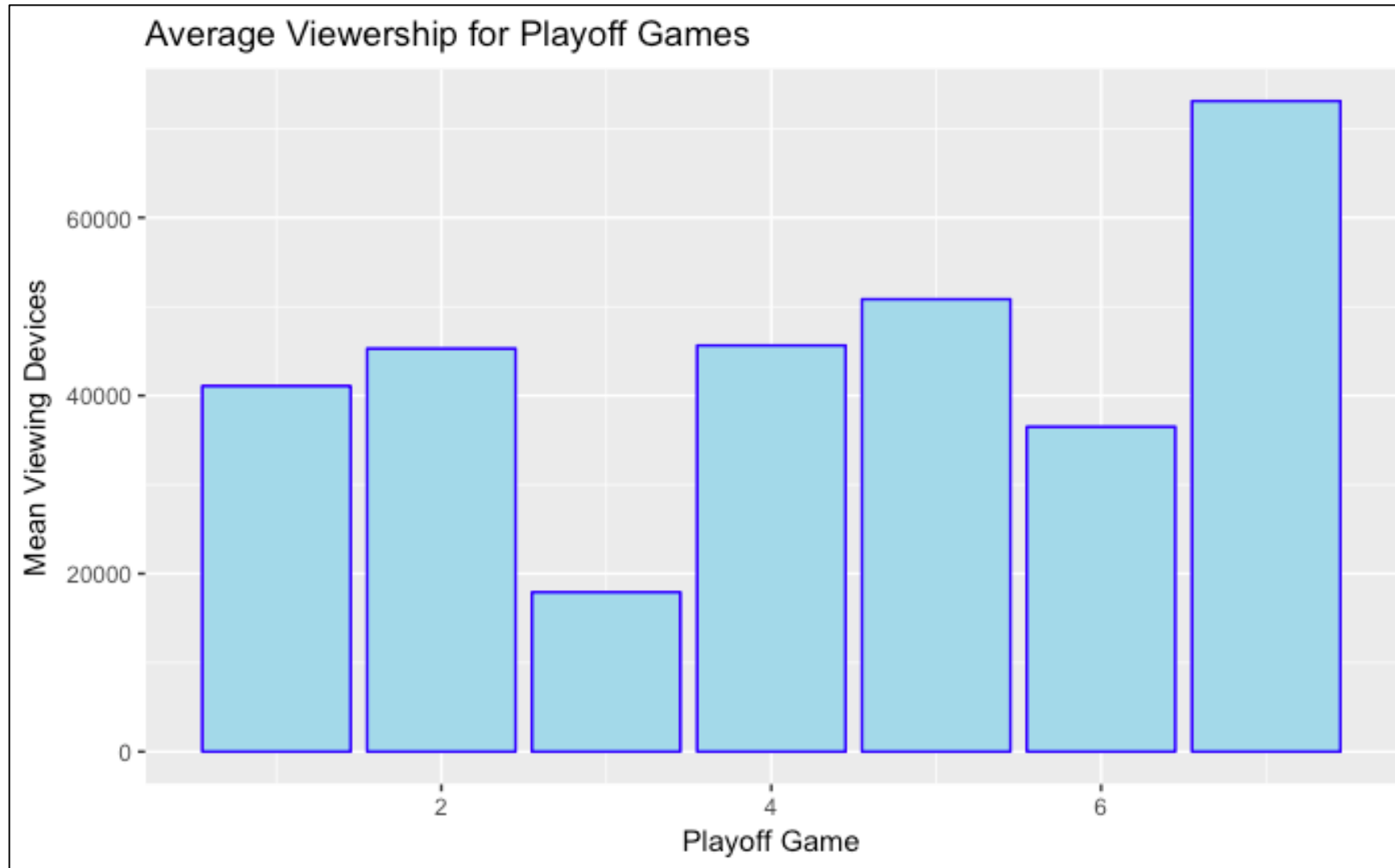
Welch Two Sample t-test

```
data: reg$devices and play$devices
t = -7.6795, df = 165.14, p-value = 1.333e-12
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
-33625.47 -19871.29
sample estimates:
mean of x mean of y
14349.71 41098.09
```

There is a positive relationship between game viewership and team revenue.



Later games result in higher viewership due to more competitive matchups.



Problem: How can we optimize matchups to maximize game viewership in both regular and playoff season games?



The Underdog Appeal



ASSOCIATION FOR CONSUMER RESEARCH

**Emotional Marketing: How Pride and Compassion Impact Preferences
For Underdog and Top Dog Brands**

The Underdog Appeal



ASSOCIATION FOR CONSUMER RESEARCH

Emotional Marketing: How Pride and Compassion Impact Preferences
For Underdog and Top Dog Brands

Journal of Social and Personal Relationships

The attractive underdog
When disadvantage bolsters attractiveness

The Underdog Appeal



ASSOCIATION FOR CONSUMER RESEARCH

Emotional Marketing: How Pride and Compassion Impact Preferences For Underdog and Top Dog Brands

Journal of Social and Personal Relationships
The attractive underdog
disadvantage bolsters attractiveness

Personality and Social Psychology Bulletin

The Appeal of the Underdog

Joseph A. Vandello, Nadav P. Goldschmied, David A. R. Richards

First Published December 1, 2007 | Research Article

The Underdog Appeal



ASSOCIATION FOR CONSUMER RESEARCH

Emotional Marketing: How Pride and Compassion Impact Preferences
For Underdog and Top Dog Brands

OP-ED CONTRIBUTORS

The Eternal Appeal of the Underdog

By L. Jon Wertheim and Sam Sommers

Journal of Social and Personal Relationships

The attractive underdog
disadvantage bolsters attractiveness

Personality and Social Psychology Bulletin

The Appeal of the Underdog

Joseph A. Vandello, Nadav P. Goldschmied, David A. R. Richards

First Published December 1, 2007 | Research Article

The Underdog Appeal



ASSOCIATION FOR CONSUMER RESEARCH

Emotional Marketing: How Pride and Compassion Impact Preferences
For Underdog and Top Dog Brands

OP-ED CONTRIBUTORS

The Eternal Appeal of the Underdog

By L. Jon Wertheim and Sam Sommers

Journal of Social and Personal Relationships

The attractive underdog
disadvantage bolsters

Personality and Social Psychology Bulletin

Science News

from research organizations

Why Do People Support Underdogs And Find Them So
Appealing?

Date: December 20, 2007

Source: Sage Publications

The Appeal of the Underdog

Joseph A. Vandello, Nadav P. Goldschmied, David A. R. Richards

First Published December 1, 2007 | Research Article



The “Issue”

USA historically has supported an “underdog culture”, yet the modern NBA is predictable and does not promote this ideology.

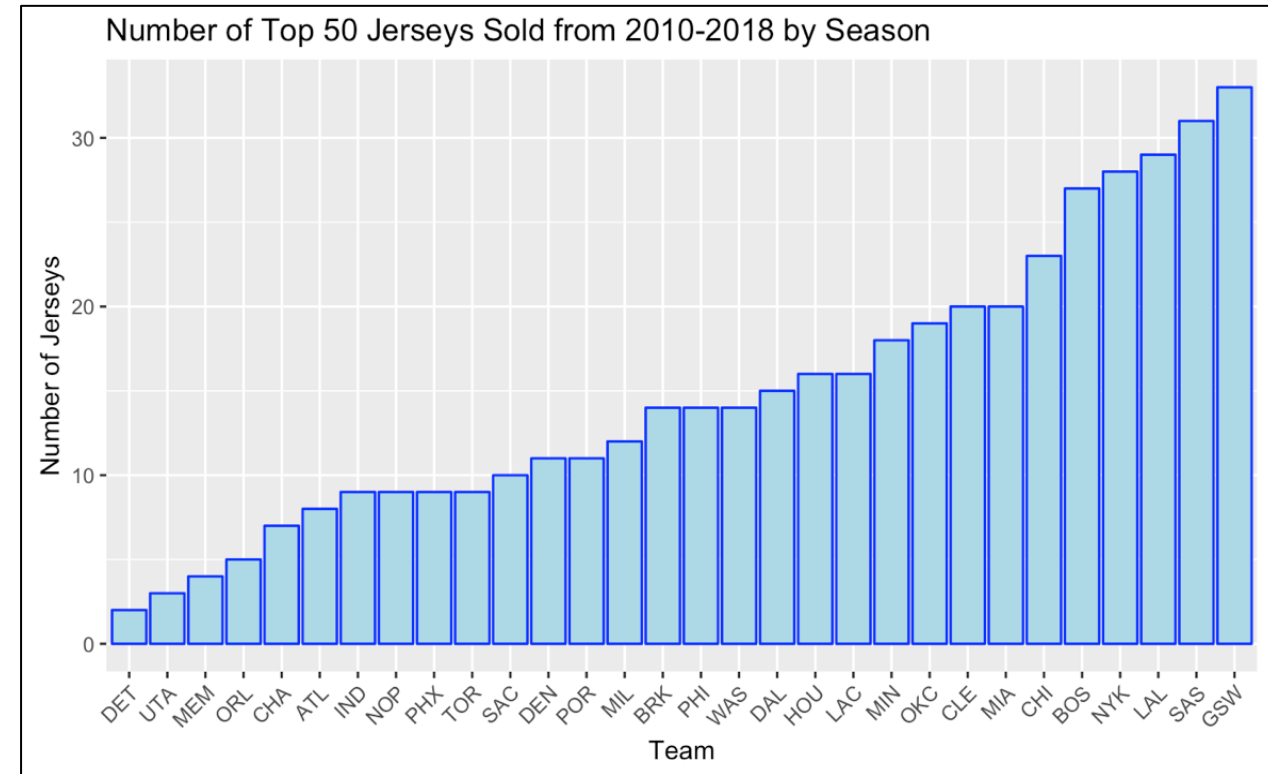
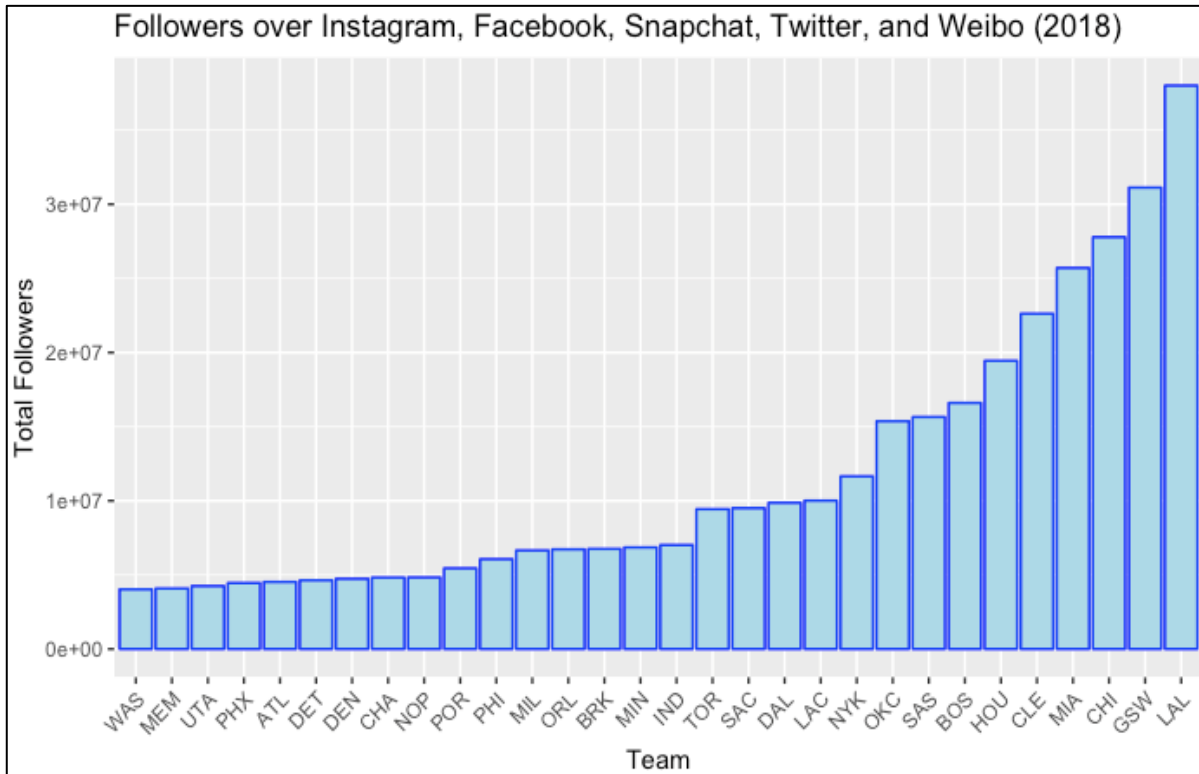
Our Idea



- Each NBA team generates value over a variety of metrics so we considered expansion of the league teams to increase the NBA's revenue
- Playoff games result in significantly larger viewership than regular season games so we are proposing to restructure brackets/conferences to help increase views and extend the longevity of a playoff series

Analysis of Potential Team Relocation

Raw Numbers: Social Media Followers and Jersey Sales for each team

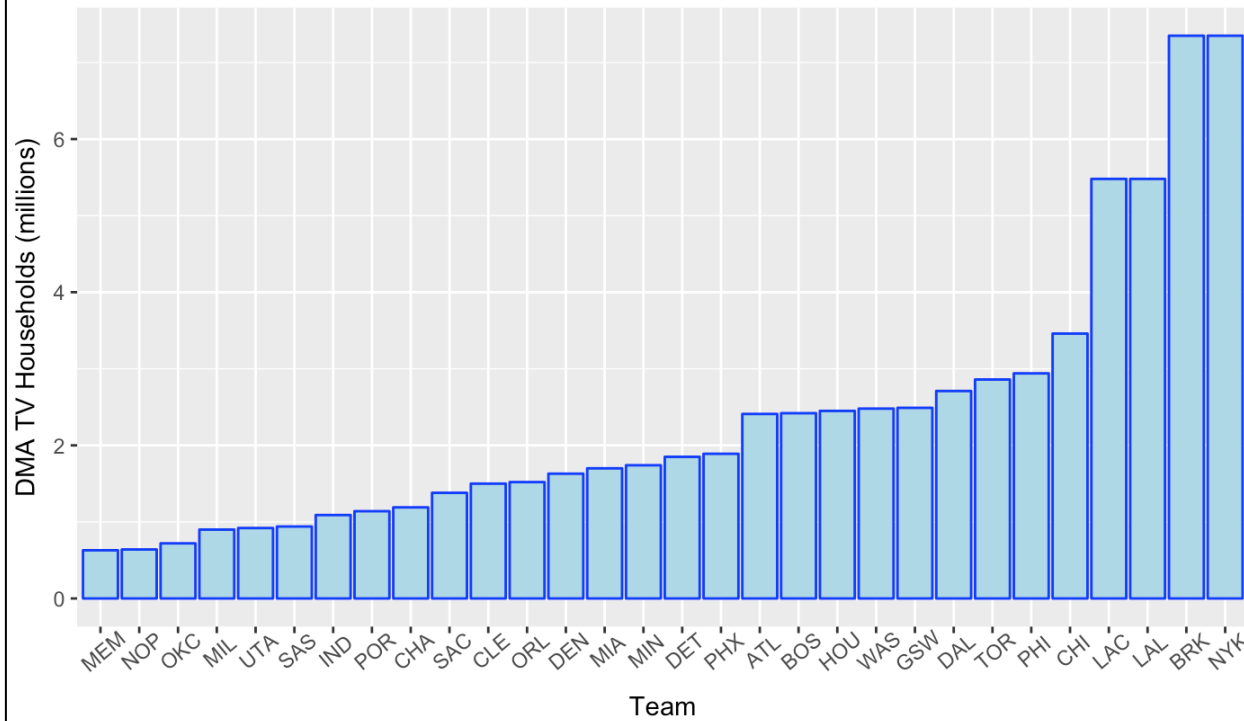


Analysis of Potential Team Relocation

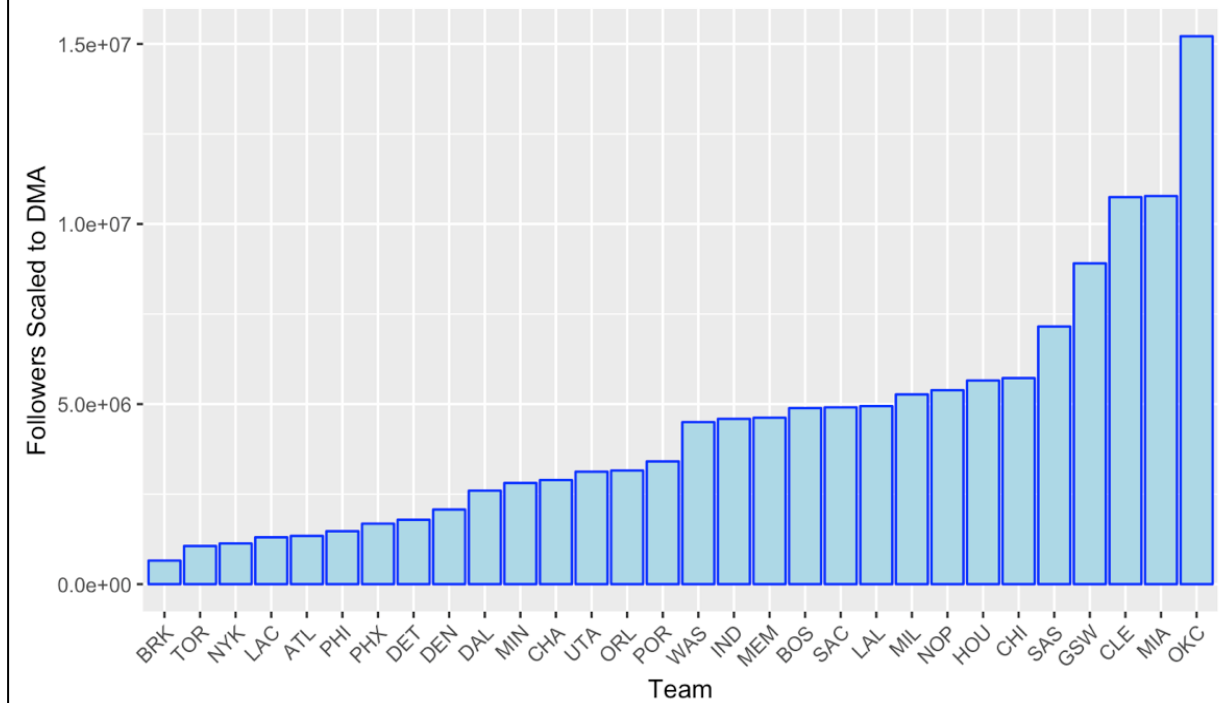
Rescaling metrics by how much of the market they capture



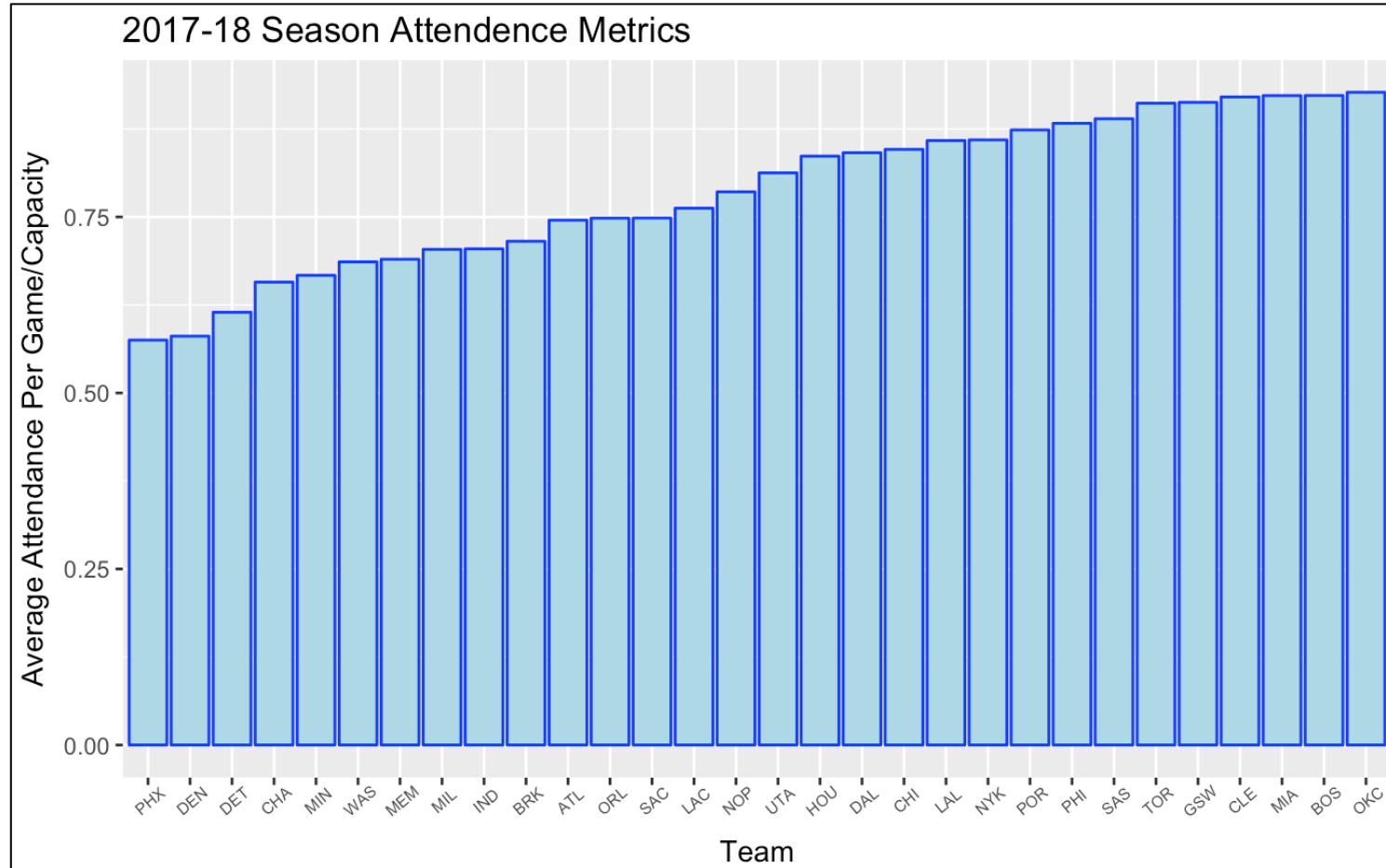
Largest Markets for each NBA Team



Relative Proportion of Followers, Scaled by DMA



Analysis of Potential Team Relocation



Recommendations



→ Adding 2 new NBA Teams (for a total of 32)

Evaluating teams by:

1. Market Size
2. Existing Infrastructure
3. Demonstrated fan interest

→ Restructuring the playoff bracket to include wildcard candidates

- Increase average viewership of games
- Make games more competitive

Potential New NBA Cities



Potential New NBA Cities



Seattle

Market Size: 4,050,000 people
(20th largest in North America)

Venue(s): KeyArena

NCAA: University of Washington
(41st most valuable D1 team)

Fan Base: Seattle SuperSonics

Mexico City

Pittsburgh

Vancouver

Potential New NBA Cities



Mexico City

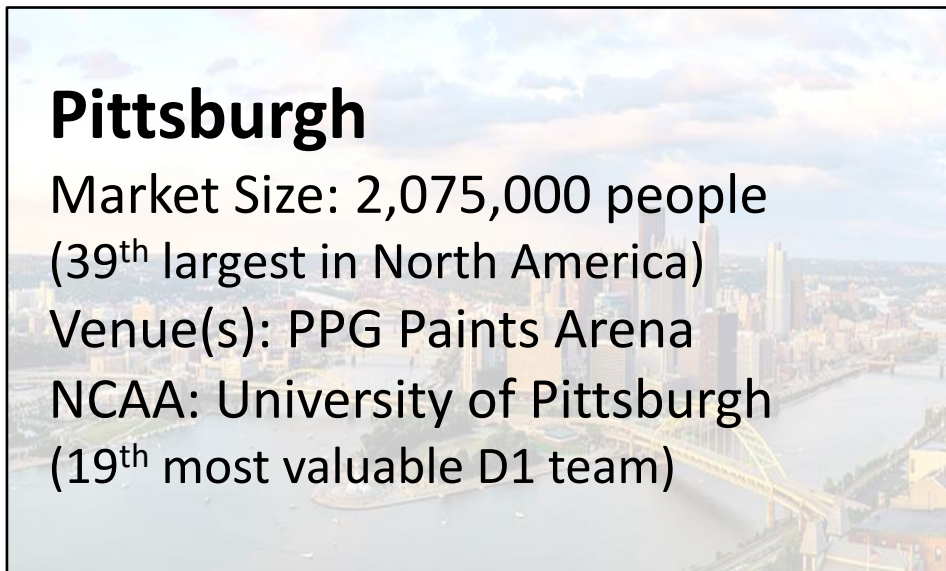
Market Size: 22,000,000 people
(2nd largest in North America)

Venue(s): Palacio de los Deportes,
Mexico City Arena

Fan Base: NBA Global Games



Potential New NBA Cities



Potential New NBA Cities



Solution: Change the Playoff Structure of the NBA



Current Playoff Structure:

- Two conferences with 15 teams, top 8 in each make the playoffs

Proposed Changes:

- Add 2 new teams, for a total of 32 teams
- Realign conferences to create 4 divisions, with 4 teams in each division
- Each division winner clinches a playoff spot (top 4 seeds)
- Next 4 seeds are determined as wild card teams
- Creates similar structure to NFL/MLB/NHL - placing higher value on each regular season game

Benefits of our Solution



Increased Revenue



More Sponsorships and Merchandise Sales



More Viewers

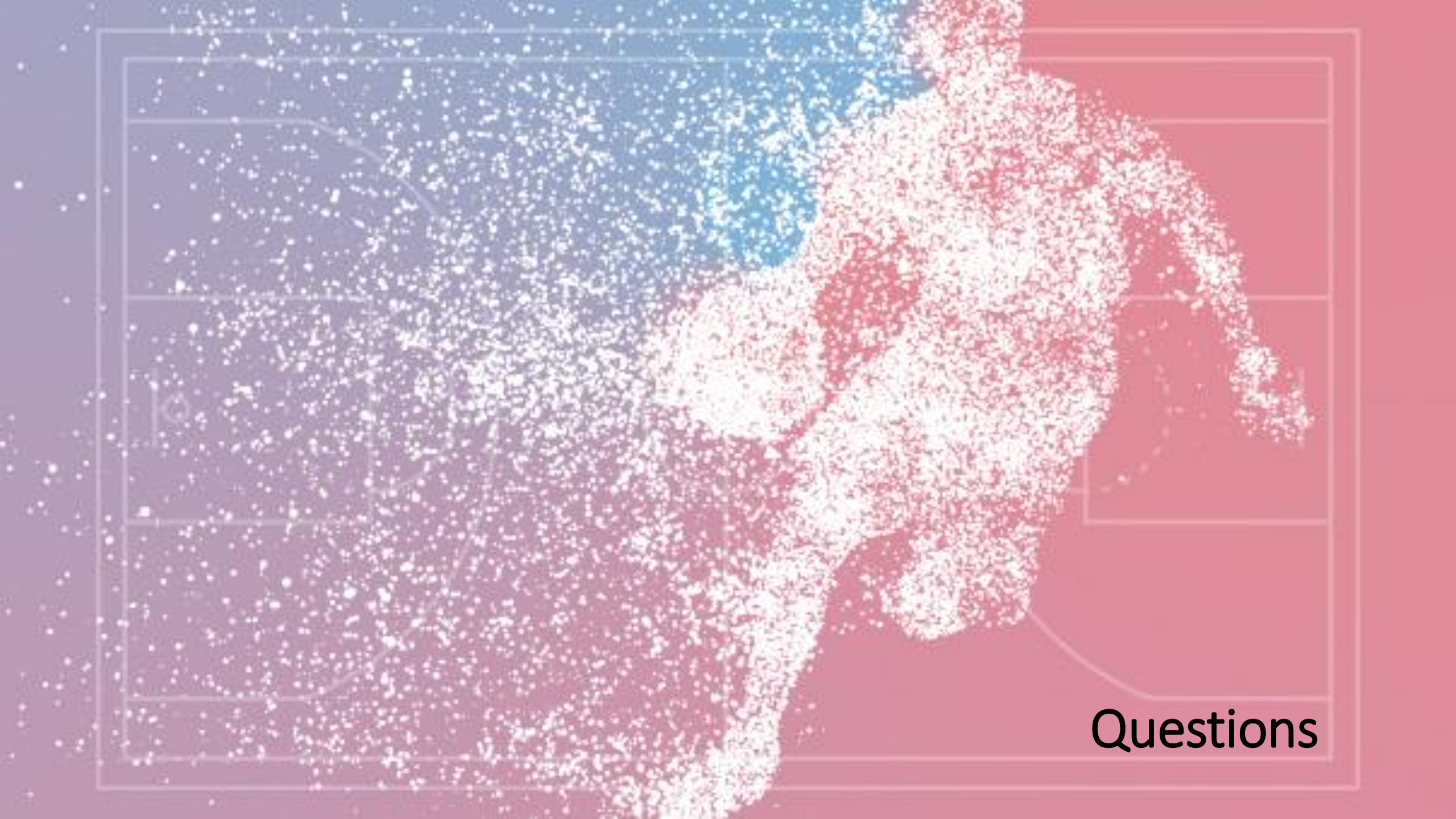


Increase Popularity of the NBA

Future Analysis



- International market data
- Data on player concerns and preferences
- Using machine learning methods, such as clustering and regression, to predict viewership from changes in division structure
- Projected financials for 32-team league



Questions