Undergraduate Thesis Prospectus

Moneyball's Impact: The Divisive Role of Data Analytics in Professional Sports

(sociotechnical research project)

by

Michael Ackley

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On my honor as a University student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

Michael Ackley

STS advisor: Peter Norton, Department of Engineering and Society

General Research Problem

How is the use of data analytics disrupting established industries and affecting stakeholders within them?

Data Analytics, interpreting large amounts of information to make optimal decisions, is transforming how industries spanning from banking to healthcare to marketing operate everyday. As data analytics technology continues to develop, financial institutions have been able to increase their profits while decreasing risk, the healthcare system has been able to personalize patient treatment to increase their success rates, and marketing firms have developed a greater understanding of consumer preferences than ever before. All of these disruptions are changing not only how big players in these fields operate, but also their interaction with consumers. As data analytics continues to identify consumer trends, sometimes even before consumers decide what they want for themselves, it's important to keep a close eye on how these developments affect the relationship between large profit seeking companies and their customers in order to preserve freedom of choice and a free flowing economy.

What lesson of lasting professional value did I learn from my internship experience at CapTech Consulting?

Moneyball's Impact: The Divisive Role of Data Analytics in Professional Sports

In the US, how have teams, owners, coaches, athletes and fans divided over the proper place of data analytics in professional competitive sports?

The 69-billion-dollar market for professional sports in the United States attracts investors. In moneyball, a term popularized by the 2011 movie of the same name, sports executives apply data analytics to maximize return on investment. Team executives and owners have increasingly looked towards data analytics to improve their chances of success by recruiting undervalued players and making in-game decisions that maximize the likelihood of winning. Coaches and athletes have shown a more split reaction, as many who grew up in a time where data analytics were not as widely utilized believe following statistics can be a distraction from the intricacies of sports that only a trained eye can recognize. Fans have also shown split reaction to these data driven changes, as some fear these new tactics take away from the traditions that have made professional sports what they are today. Other fans feel that utilization of data analytics and technology in sports will not only better the consumer experience but also lead to more fair competition.

Following the success of data analytics pioneers such as the 2002 Oakland Athletics, executives have continued adopting new technologies in this field to try to gain an advantage over their competitors (Montclair State University, 2023). Some coaches today believe the use of data analytics for in-game decision making is key to finding success (Hayhurst, 2023), while others believe they have an ability to control the game greater than that of data analytics (Nguyen, 2023). New York Giants offensive coordinator, Mike Kafka highlighted his positive experience with the use of data analytics for play calling in an interview with The Athletic in which he said "And for me as a play caller, 'Here are things that you need to be prepared for and take a peek at this game or this clip, and what would you call in this situation.' And then kind of giving you a multiple choice question and go, 'Alright, if you chose this, your win percentage increased by two percent. If you did this, it increased by 12. If you did this, increase by 20

percent.'". Similar to coaches, fans of professional sports are split on the use of data analytics, as some are weary of the changing landscape this provides (Bloom, 2022), while others look forward to the improved accuracy and greater experience this technology can bring when used well (Olavsrud, 2023). Theo Epstein, former president of the Boston Red Sox and Chicago Cubs has said "Executives like me, who have spent a lot of time using analytics and other measures, have unwittingly had a negative impact on the aesthetic value of the game and the entertainment value of the game,". It is these changes that increase teams win probability at the cost of entertainment value that have fans questioning where the line should be drawn on the use of data analytics to drive success.

Researchers have begun investigating the role that data analytics are having on professional sports in the United States and predicting how this will affect the future of these competitions and the participants involved with them. For example Link (2018) discusses how sports science is using data analytics to reduce player injuries . Morgulev, Azar, and Lidor (2018) point out the importance of taking into account circumstantial factors in sports which might not be well represented by data, therefore showing a need for human interpretation when taking guidance from data analytics. Finally, Sedkaoui (2018) justifies the use of data analytics across entrepreneurial activities and predicts how these tools will continue to contribute in the future.

There are a wide variety of uses for data analytics in professional sports, and it seems like its prevalence is only going to continue growing. Similar to other industries, professional sports will likely be molded by data analytics in the coming years and it is up to teams, owners, coaches, athletes, and fans to decide in what way the industry will transform.

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