

CHANGING THE GAME: The Rise of Sports Analytics

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Winning in team sports has always been a function of superior ownership, front offices and coaching. Decision making as which players to draft, trade, develop, coach and which system to play have traditionally been made by a "gut" feeling or adherence to past traditions. But then came Oakland Athletics' General Manager, former ballplayer Billy Beane.

The 2003 book "Moneyball," by Michael Lewis, chronicled Beane's use of sabermetrics to discover the secret to success in the often times unfair and imperfect science of baseball player evaluation. This was the first known use of prioritization of statistics and data to make personnel decisions in professional sports. Beane determined that scoring runs was the fruit of certain analytics. In short, his theory was that a team with a high on-base percentage was a team more likely to score runs and, as a result, more likely to win more games. Beane drafted and traded for players that fit this system, and only those players. The immediate result was that the Athletics were a team that drew far more walks than strikeouts. Visually, the A's were different too. Beane's sabermetrics system did not require that players fit the height, weight, speed or body composition prototypes that dictated the moves of other clubs. This high efficiency, low out system has not only revolutionized baseball's modern era, but professional sports as a whole.

Today, every major professional sports team either has an analytics department or an analytics expert on staff. Teams often have to scan scout notes from clipboards, convert those PDF's to Excel, and then hand those files over to top-notch data developers. Thereafter, another set of young talented mathematicians crunch numbers that scouts and general managers use to help determine which players they think fit their club best. This is all a part of creating an overall profile of a player to determine if that player is worth drafting, signing as a free agent, or acquiring in a trade. Analytics are the present and future of professional sports. Any team that does not apply them to the fullest is at a competitive disadvantage.

The popularity of data driven decision-making in sports has trickled down to the fans, which are consuming more analytical content than ever. There are now entire websites dedicated to the research and analysis of sports statistics and how they relate to a prediction in performance. One example is FiveThirtyEight.com, which was started in March 2008 by Nate Silver. Silver, coming from a baseball analytics background, launched the site to provide details into more than just baseball coverage. The site, which features an ESPN affiliation, has over 20 journalists counting and crunching numbers for fans to gain a better understanding of an upcoming game, series or season. Silver's methods proved so

successful in sports that he began applying them to politics. In 2008, his analytics system predicted the eventual outcome of how 49 of 50 states would vote in the Presidential Election that year.

Using a sophisticated system for crunching numbers, a site like FiveThirtyEight can assess prior results, win-loss records and opponent history to determine the outcome of a future sporting event. Before a game is even played, FiveThirtyEight can come up with the most likely outcome based on numbers; as opposed to a gut instinct.

Basketball is one of the best examples of how analytics have changed the way sports are played and player performance is measured. NBA teams are now using a form of technology called “Player Tracking,” which evaluates the efficiency of a team by an analysis of player movement. According to the SportVu software website, teams in the NBA are now using six cameras installed in the catwalks of arenas to track the movements of every player on the court and the basketball 25 times per second. The data collected provides a plethora of innovative statistics based on speed, distance, player separation and ball possession. Some examples include how fast a player moves, how far he traveled during a game, how many times he touched the ball, how many passes he made, how many rebounding opportunities he had, and much more. The information is available to fans on NBA.com and NBA TV.

While technologies like “Player Tracking” seem like the wave of the future, there is a level of difficulty in determining how to utilize the surplus of information that it provides to help players and coaches gain an advantage. With so many criteria to choose from, what should an evaluation be based on in the first place? What factors should be prioritized when a team is deciding on whether to draft, release or trade for a player? The sheer volume of data can be overwhelming. Two other difficult factors are how the data’s predictions will mesh with a team’s coaching staff, and offensive and defensive system. These all vary by team. Unlike the Moneyball effect on baseball, there is no guarantee that tracking player movements can help a win-loss record in basketball. Vivek Ranadive, the Sacramento Kings’ owner, echoed this sentiment at the recent World Congress of Sports. Nevertheless, data analysis has no doubt changed the game of basketball forever.

Sports analytics will continue to evolve. They will undoubtedly become more heavily relied on, but there are still ways that they can be improved. Look for the next analytical breakthrough to come in the areas of predicting how a player’s mental make-up will adjust to the rigors of professional sports and how the emotional aspect of the responsibility correlates to on-the-field performance. Teams need an analytic that predicts responsive behavior. If a team could spot a potential Aaron Hernandez situation before it happened, it would save the team plenty of grief, opportunity cost, and financial loss.

Analytics are not currently designed to measure an athlete’s heart or desire to be the best. They cannot prevent a team from drafting a “bust.” That day is not far off though. Since Billy Beane first started utilizing statistical predictors a little over a decade ago, we have seen

every MLB team adopt a copycat system to an extent, the NFL hire analytics executives, and the NBA introduce the most sophisticated technologies in terms of performance information.

One thing is for sure, the use of analytics has enabled organizations and their players to build a more efficient mousetrap and it will impact every aspect of HS, collegiate and professional sports.