The NFL joins the data revolution in sports

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Credit: AI-generated image (disclaimer)

In some potentially game-changing news for the way we understand professional football, the National Football League began the 2016 preseason by placing tracking sensors in its footballs for the first time. The chips are also in balls used in Thursday night games.

Over the past decade, we've seen an explosion in data analytics in sports, particularly on the professional level. Technological advances in cameras

and sensors have allowed teams, media and fans to gain insight into a bunch of previously gray areas of sport performance, such as the National Basketball Association's use of SportVU to track every bit of player and ball movement on the floor.

The concept of integrating numbers and analysis into scouting, training and coaching isn't new. But access to powerful hardware and software has greatly increased the quality and quantity of available data. A nearly insatiable appetite for data on sports has created a sports analytics market that is set to grow from the millions to the multiple billions of dollars over the next few years.

Most major professional sports leagues have developed partnerships and technologies that allow for deeper looks into their sports, from baseball's player-tracking system to the English Premier League's partnership with ChyronHego. But professional football has been slow to adapt to the data revolution in sports, and the NFL has fallen behind its contemporaries in capturing and providing data to teams and fans.

Now the league is finally taking steps in the direction of more quantitative measurement. A test run of placing tracking sensors in NFL footballs, combined with an ongoing effort to track player movement through sensors in shoulder pads as part of a partnership with technology company Zebra, opens up a whole new set of possibilities for teams, players, media and fans of the league.

What technology offers NFL teams

The NFL is moving toward a far more technologically driven future, both in practices and in games. (It's also just begun engaging fans through Twitter livestreams.) Certain teams are already using player tracking data in practice to aid with coaching. Teams and coaches are searching for new ways to help quarterbacks practice, including

exploring ideas of virtual simulators and drone-aided scenarios. The addition of league-wide player and ball tracking could potentially spread these practices beyond the teams that use them, which currently include the Cowboys, Panthers and Saints.

Ideally, data from ball trackers or shoulder pad trackers could serve two purposes for the NFL. First, it can help teams understand player movement and the flow of play more completely, providing coaches a greater understanding on how players are physically performing during plays, and allowing for input from coaches to players on how to fix their technique to increase efficiency or limit exposure to injury, possibly leading to more efficient training and practice.

Second, the data can be used by the league's media partners, and perhaps its fans, to further explain the game to audiences, particularly on television. By tracking player movement digitally, clearer representations of what makes individual football plays succeed (or fail) can be provided. These data also allow media to break down individual physical accomplishments, such as extraordinary bursts of speed by wide receivers.

The NFL's plan to release tracking data within 24 hours of a game's end points to a future in the league where hard data on player and ball movement are integrated into the daily strategic calculations of each coaching staff. This will likely create a rush to innovation within NFL coaching, as each staff grapples with what will likely be a huge amount of data every week, trying to come up with best practices and analytical methods for evaluating and using that data constructively.

This is beyond the skills of most current NFL coaching staffs, but remember that the same could be said about NBA front offices a decade ago. Now, almost every forward-thinking NBA front office employs multiple people whose background and job duties are based in data-

based evaluation of players.

In other sports

The NBA has been a leader in this area, partnering with tech company SportVU since 2006 to install motion-tracking cameras in every arena. Six cameras track player and ball positions 25 times a second, and those data are provided to both media and fans after the game ends. These cameras track the on-court coordinates of each player 25 times a second throughout the game, then combine it with additional information to have it correspond with items such as ball touches, dribbles and shots.

Media members have been able to use this NBA data for a variety of purposes, such as analytics guru Kirk Goldsberry's CourtVision system, which allows for advanced shot charts for any player on any team, giving fans deeper insights into who performs well offensively, and from where.

As fans and media express greater interest in data and analytics from their favorite sports, the leagues have become more open about sharing those data. The NBA recently announced that it would make SportVU tracking data available to the public starting in 2016. The stated goal of this move is to allow fans to deepen their understanding of the game, and it will be fascinating to see how people use this trove of data.

Other sports have added motion and advanced statistical tracking as well. The NHL added active SportVU player tracking coverage in 2015, giving real-time telemetry on player movement. Companies like STATS now provide a bevy of event data points for major professional soccer leagues across the world, such as shots created, defensive actions and all player touches.

What about fans?

Can fans expect to directly receive NFL data from ball and player tracking? It may take a while before that becomes a reality. Media partners are already utilizing the data and providing some of it to fans. The NFL's Xbox One app allows for some of the tracking data to be publicly available through that gaming console, so we could see fans gaining access to small amounts of data through mobile devices.

It would be theoretically possible for small pieces of data, such as player speed or individual players' movements, to be made available in-game. However, NFL teams and coaches might be unwilling to provide that information due to concerns that the competition would gain an in-game advantage by knowing how well (or poorly) a receiver was running his routes or a lineman was blocking.

The real question for fans is what happens with the huge amount of data that would be generated from tracking in each game. Ideally, the NFL would follow the NBA's recent decision to open tracking data up to the public. Allowing fans and nonpartner media to examine the tracking of each player on each play in an NFL game could help us to better understand why certain plays work or don't work on the football field, or why certain teams are successful or not successful. With the line between success and failure seemingly razor-thin in the NFL on a weekly basis, more data may help us better understand why some teams win and why some teams lose.

The NFL has been quiet about what it plans to do with the data from these tracking devices. But as technology allows leagues to gather more data about themselves, the desire for access to those data, both from teams and from fans, will continue to grow. Despite holding out from joining the data revolution for a long time, the NFL has a great chance to capitalize on it.

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