2Bucketz NBA Hackathon 2017

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Abstract

In order to give basketball enthusiasts a better idea of what is really going on in a game, we developed a new way of presenting box scores and created a new statistic called the Effective Playmaking Metric. From a visualization standpoint, we shifted away from the summary-based table system of the box score towards a graphic-based accumulating metrics plot. Using play-by-play data, we are able to divide up the game into its smallest significant events to show not only what occurs in the aggregate, but when these occurrences take place. To supplement this accumulating metrics plot, we also graphed the ball and player positions on the court, frame by frame, with SportVU data. Taking these frames, we animated smooth movements on the court and updated the accumulating metrics plot in real time. Along with our visual overhaul of the traditional box score, we developed the Effective Playmaking Metric (EPM), which was inspired by the apparent lack of a relevant metric for determining true offensive prowess. The EPM considers the following: dribbles per possession, expected value of shots modeled by a neural network, and assist to touch ratio. We hope this new metric will help differentiate between true team players and stat-padders, as those who make decisions with the team in mind will achieve higher EPM ratings. To compare this new metric of playmaking and offensive effectiveness with existing ones, we included a radar graph on our visual dashboard with points, assists, plus-minus, FG%, and 3P% on the axes and EPM represented by the intensity of color. This radar is updated along with the accumulating metrics plot and the player-ball positions, so we can see how all of these variables change with each other. The engaging visuals of our dashboard, along with the Effective Playmaking Metric, represent our vision for capturing the action and complexity of the game in a simple and accessible interface.