Sports Analytics: Perspectives on How Analytics Can Drive Decisions in the Boardroom and on the Field

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While professional sports organizations continue to seek techniques to augment their on the field success, the growth of sports analytics has concurrently become increasingly competitive and complex. However, despite these recent developments and availability of data, much of the information shared between organizations, academicians, and practitioners is often limited and anecdotal. In this symposium, we seek to provide a brief overview of analytics and subsequently share several best practice examples of how scholars have integrate analytical techniques into several core business entities.

Although data is an incredibly valuable resource, the utility of the data is largely dependent upon how well it is analyzed and more importantly communicated to a broader audience. The underlying tension between subjective and objective data extends beyond sport organizations and can be found in other academic disciplines including behavioral economics, management, and finance (Wolfe et al., 2007). In 2003, best-selling author Michael Lewis’ published Moneyball detailing how the small market Oakland A’s had utilized various non-traditional statistical techniques to build a competitive team of players without the luxury of spending significant dollars relative to the rest of Major League Baseball (MLB).

An illustration of the dramatic growth of sport analytics can be seen in the annual MIT Sloan Sports Analytics conference. Founded by Sloan MBA alumni and current Houston Rockets’ GM Daryl Morey, the inaugural conference held in 2007 drew 175 attendees dispersed across several classrooms at MIT (http://mitsloan.mit.edu/newsroom/2013-sports-analytics-conference.php). Today, the conference has exploded by a factor of 15 in 7 short years becoming the worldwide leading forum for industry professionals (scholars and executives) to discuss how analytics can play a leading role in the global sports industry.

Although analytics is often associated with player personnel decisions and roster movements, professional sport teams are now relying on analytical techniques to confirm or predict answers to questions related to ticket pricing strategies, sponsorship return on investment, and customer relationship management. In today’s complex business environment, analytics has become an important tool for organizations. However, as noted by (Phillipps, 2013) in a research study involving more than 100 surveys and in-depth interview with senior management representing 35 companies worldwide, 96% of the respondents indicated analytics will become more important in operating their organizations in the next 3 years. This suggests organizations should continue to develop innovative strategies to successfully implement analytic techniques within their business model or potentially risk losing valuable market share. The objective of this symposium is to bring these two separate literatures together to gain a more thoroughgoing understanding of the how analytics bolsters managerial decision making both in the front office and on the playing field. The symposium will consist of an introduction, four presentations, and a brief Q&A session.

Introduction: Analytics: What is it and how can we use it?

Presentation 1: Quantifying Fan Engagement through Social Media: Implications for Sport Managers.
This case study examines the use of Twitter to identify where teams’ fans are located, what they are talking about, and how they feel towards the team. Text mining techniques were employed to distill meaning from a vast amount of information (Baker & Kwartler, 2014). Sample tweets from 10,000 followers were examined for each of three
purposefully-selected Major League Baseball teams. From the Twitter locations, zip codes were identified and subsequently demographic data on locales were identified. Commonalities and dissimilarities among fans’ comments by team were identified. A sentiment polarity analysis revealed detractors and evangelists. Informed by ‘big data’ trends, the purposeful use of social media text mining informs strategic decisions on all or some of the following: a) segmentation; b) targeted marketing; c) licensed product sales and distribution; d) membership (and ticket sales); e) sponsorship activation; f) public relations, community relations, and media relations; and g) special events.

**Presentation 2: Competition for Sports Revenues: Ticketing, Media, and Fan Clusters**

This study presents three sports analytics projects for industry participants StubHub (SH), NASCAR, and the California Golden Bears football team (Cal). SH was presented with a natural experiment in which some tickets were being sold in the traditional way and others were being limited in terms of the possibility for resale of tickets. Antitrust economics theories were tested to see if the limited method produced fewer tickets resold and at higher prices. NASCAR was being challenged in an antitrust lawsuit by a race track. The track’s expert showed that favoritism occurred for the tracks that the family who owns NASCAR also controls. However, once proper analytical techniques were used, the result was flipped. Finally, Cal wanted to understand its fan base and to see if there were discernible clusters of fans to whom specified marketing tactics could be used. Analysis based on surveys was conducted and categorized 95% of the fan base into one of five clusters.

**Presentation 3: Going Beyond Moneyball: Analytics as an Evidence-Based Approach to Team Management**

The presentation explores how analytics is being used in a variety of European team sports to support decision making in all aspects of team management not just player recruitment. Examples will include: (i) the use of regression analysis to develop a player/team performance rating system; (ii) the use of win probabilities to create a traffic-lights system of key performance indicators (KPIs); and (iii) the use of hypothesis testing to construct a SWOT analysis of competitors. The technical and cultural barriers to the use of analytics in team management especially in the highly tactical invasion team sports will be identified.

**Presentation 4: Can Not-So-Big Data Assist in Winning Big Trophies?**

This presentation describes the process of creating a player performance evaluation and development program. The context of this research is a niche sport where big data simply do not yet exist, thus presenting a different set of challenges to the use of analytics. How researchers and sport managers nurture a culture of analytics (Kiron, Prentice, and Ferguson, 2013), make best use of their respective competencies and resources, and gradually advance an analytics-based program emphasizing both long-term player development and game success will be discussed. Equal time will be devoted to program development generally and the specific procedure linking the limited game data with coaches’ opponent scouting reports and longitudinal evaluations of player technical quality.

**References**


