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## Management Whitepaper: The Introduction and Application of Sports Analytics in Professional Sport Organizations: A Case Study of the Tampa Bay Lightning

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Management Whitepaper

# The Introduction and Application of Sports Analytics in Professional Sport Organizations

*A Case Study of the Tampa Bay Lightning*

Michael Mondello and Christopher Kamke

## I. Research Problem

The purpose of this paper is to share best practices of how one professional sports organization, the Tampa Bay Lightning, has successfully integrated analytics within several departments to help management make business-related decisions. This paper introduces and applies a timely topic impacting professional sport organizations—sports analytics. Although analytics have been used for player personnel decisions related to paying, acquiring, and retaining talent, teams have also begun using analytics as a tool to assist with ticket pricing, product demand, scheduling, sponsorship ROI, Customer Relationship Management (CRM), and other financial/managerial applications. Therefore, this paper would likely be useful to stakeholders working in various segments of collegiate or professional sport organizations. In addition, the article would have added value to employees working in other types of sport settings including but not limited to: Associations (PGA, WTA), Leagues (NBA, MLB), or consulting groups. Sport managers involved with revenue generation may also find this article useful.

## II. Issues

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 CRM. One example is how teams are now working together with secondary ticketing agencies to develop the optimal way to disseminate tickets. 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 paper, we sought to provide a brief overview of analytics and then share several examples of how one National Hockey League (NHL) franchise integrates analytical techniques into several core business entities. According to Davenport and Harris (2007) analytics can be classified as descriptive, predictive, or prescriptive. Descriptive analytics incorporates gathering and organizing of data and then detailing the qualities of

the data. While this analysis has merit, descriptive analytics provides no information about why something happened or what may occur in the future. Predictive analytics incorporates previous data to assist with forecasting future trends. While predictive analytics are useful for predicting trends, one cannot assume any explicit cause/effect relationship. Prescriptive analytics provides an additional layer of analysis by offering suggestions for implementing solutions to problems.

### III. Summary

Data capture and integration have helped the Lightning increase sales transactions to unprecedented levels. For example, as part of a loyalty initiative, the Lightning offered free customized team jerseys to season ticket members. This type of program creates incentives for both the team and the fans. For the organization, having fans wear jerseys to the games helps foster a team atmosphere within the arena and on television as other fans attending games or watching on television see these jerseys which potentially leads to additional season ticket sales. As an incentive for season ticket holders to wear their jersey to games, they receive discounts on concessions and merchandise. This initiative was made possible due to a radio frequency identification (RFID) chip sewn into the jersey sleeve capturing all in-arena transactions made by the season ticket member. This information provided new insight on individual consumer purchasing habits and preferences. In addition to the discount, this data empowers the Lightning to create individualized targeted concession and merchandise offers to consumers.

### IV. Analysis

The organization also uses analytics to estimate the demand for tickets on a game-by-game basis. The Lightning use regression modeling to predict ticket sales and attendance demand on a game-by-game level. This modeling identifies significant factors affecting sales and attendance.

For example, through modeling, the Lightning identified the month of March as a significant factor affecting ticket sales. A Lightning game played during the month of March yields “X” more tickets than a game played in December, the month used as the control. This practice, conducted monthly prior to the season, permits the Lightning to variably price tickets based on individual game demand and then target promotions accordingly. Additionally, as frequently as daily, measurements on dynamic factors such as online search frequency or secondary ticket market ticket transactions are analyzed to measure variations in team interest. By applying demand modeling, the Lightning use both proactive and reactive analytics to drive both primary and ancillary revenues as well as support community and consumer initiatives.

## V. Discussion/Implications

Sport teams today face almost overwhelming amounts of data, complex and disparate systems, and a multitude of consumer behaviors. Data and digital technologies provide unprecedented amounts of opportunities for sport teams to learn consumer needs, preferences, and behaviors. In this environment of surplus data, effectively gathering actionable information is a key factor in business success. Actionable data allows teams to implement data-driven strategies across the organization.

Within the last decade, the sports industry has identified one key to future business success is developing a greater understanding and ability to serve their respective fans. Previous research has consistently demonstrated the passion and loyalty sports fans have towards their team. While sport organizations have a general sense of their fans, only a select few if any, can realistically proclaim they possess a true 360-degree understanding of their customers. By engaging fans more effectively, sport organizations such as the Lightning believe they can acquire, strengthen, and retain customer relationships. Data analytics, technological advances, and system integration will all be important factors as sport teams look to expand their customer views to 360 degrees.

Recently, the Lightning has partnered with TIBCO, a company specializing in data management and real-time pricing to utilize its "Spotfire" data visualization software to take the next step in the organization's integrated use of data. Spotfire will permit the Lightning to integrate multiple data sources and automatically connect, source, and process data in real time to create business dashboards and provide data insights across the organization. Previously, the Lightning have faced time-consuming challenges manually and repetitively merging data from ticketing, database marketing, point of sale, and other sources. Moving forward the team will be able to share and act on data and insights more efficiently.

Although data and technology can introduce additional complexity and complications to an organization, the Lightning views them as opportunities. Great opportunity is usually accompanied by challenges. The sport teams addressing and also conquering data through technological initiatives will be the teams' positioned to lead sport business innovation in the future.

Finally, we strongly encourage sport business/management faculty to creatively think about different strategies on how they can incorporate classroom projects into a class that potentially can benefit practitioners. As noted by Sutton (2012), assignments focusing on business analytics, marketing, and sales would likely be well received by sport organizations looking to improve their operations. Furthermore, when students first hand observe how research can be a useful tool for identifying and providing viable solutions to sport organizations they may then continue this practice upon entering the industry.