# “Moneyball” Analysis and Identifying Big Data and Analytics Applications

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## Oakland Athletics (Oakland A’s)

Prior to 2002, the Oakland A’s baseball team would have been classified as an ‘analytically impaired’ organization. Senior management prided themselves on their ability to select talented players based not on analytics, but on experience and instinct. However, in 2002, Billy Beane, General Manager of the Oakland A’s, recognized that he could not use the same process to select players as well funded teams because he could not offer ‘star players’ an attractive salary with his limited budget. This realization spurred Beane to recruit Peter Brand, Yale Economics Graduate, and use the sabermetric approach to select players who could maximize team wins. The aim was to “… find value in players that nobody else can see” (Miller, Pitt, De Luca & Horovitz, 2011).

This dramatic change in approach propelled the Oakland A’s from being an ‘analytically impaired’ organization to an ‘analytical competitor’ within a single baseball season. At the end of the 2002 season, the Oakland A’s possessed the four key elements of an analytical competitor:

### 1. Analytics is used to support ‘strategic, distinctive capability’. The Oakland A’s application of analytics to select undervalued players and manage their on-field positions to maximize wins created a distinct competitive advantage for the team. Typical of an analytical competitor, the Oakland A’s team was willing to explore and apply new analytical measures to create this unique competitive advantage.

### 2. Organization-wide approach is taken regarding analytical activities. Beane promoted player analytics and shared the data with the Scouts, Team Manager and players. An organization-wide approach to analytics also requires an emphasis on accurate data and analysis so business decisions are made using the correct information (Davenport & Harris, 2007). While no explicit reference was made to the quality of the data used by the Oakland A’s, the accuracy of the decisions made indicates that both the data and analysis were correct.

### 3. Senior management are committed to analytics. Commitment to analytics is required from senior management because it takes considerable persistence and investment to change core elements of a company, such as its culture (Davenport & Harris, 2007). Beane demonstrated his commitment to using analytics to select players, even when facing considerable resistance from other senior managers. While not made explicit in the movie, enough evidence is provided to assume that senior managers were supportive of using analytics to select players and their positions on-field following Oakland A’s considerable success using this method. Perhaps the best indication of this commitment is that Billy Beane’s contract was renewed by the owners of the Oakland A’s.

### 4. The company demonstrates large-scale ambition. Analytical competitors demonstrate a willingness to implement (what may initially appear to be radical) analytical strategies that will significantly influence the future success of their companies (Davenport & Harris, 2007). The Oakland A’s demonstrated large-scale ambition when Beane made the unique decision to use analytics to identify undervalued players. As a result of this large-scale ambition and commitment to being an analytical competitor, the Oakland A’s saw non-financial returns (more wins and fans).

### Beane could have more effectively advanced the Oakland A’s analytic capabilities

Despite the Oakland A’s success, Beane could have been more effective at advancing the company’s analytic capabilities if he had been able, earlier in the transition process, to garner support from senior management. While Beane and Brand were very committed to using analytics to improve their team’s performance, such dedication was not initially apparent amongst other senior managers. Both the Scouts and Team Manager articulated their lack of support for the new approach, which initially undermined the changes that were implemented by Beane and Brand. Beane later reflected that he should have involved the Team Manager in the changes and began to adopt an organization-wide approach to analytics (e.g. sharing player statistics with the players to assist their individual performance). This repositioning of analytics from ‘belonging’ to Beane and Brand, to being shared organization-wide, contributed the Oakland A’s’ ultimate success.

## Progressive Insurance (Progressive)

Progressive prides itself on “being one step ahead of the insurance industry” by using analytics to create affordable insurance solutions for low-risk consumers (Progressive, 2016). Like the Oakland A’s, Progressive possesses all four traits of an analytic competitor.

### 1. Analytics is used to support ‘strategic, distinctive capability’. While Progressive is not the only insurance company that uses analytics, the company is unique in that it uses analytics to identify new profitable customer segments before its competitors (Davenport & Harris, 2007). Progressive categorizes consumers into narrow segments, performs regression analysis to identify probable claims, and sets an insurance premium according to this analysis that will generate a profit (Davenport, 2006). This use of analytics to create narrow, unique and profitable customer segments creates a strategic competitive advantage for Progressive that is distinct from its competitors.

### 2. Organization-wide approach is taken regarding analytical activities. Analytics should not be limited to a single team within an organization, instead a whole-of-organization approach to analytics should be implemented (Davenport & Harris, 2007). This mentality is embedded at Progressive, in part, due to the organizational structure (Kauderer, Schwarz, Olsen & Chew, 2012). Progressive affords its executives responsibility for an entire product/segment and a multidisciplinary team of staff with skills ranging from analytics to marketing (Kauderer, Schwarz, Olsen & Chew, 2012). This multi-disciplinary (rather than silo) approach ensures that analytics is integrated throughout the organization, making the “… management of analytics and the data on which they are based an organization-wide activity” (Davenport & Harris, 2007).

Further, an organization-wide approach to analytics requires an emphasis on accurate data and analysis so business decisions are made based on a ‘single version of the truth’ (Davenport & Harris, 2007). Progressive’s commitment to accurate data and analysis is evidenced by their TripSensor technology (Davenport & Harris, 2007). Using TripSensor, Progressive is able to gather data on consumer driving behavior (e.g. the number of sudden stops made) to improve their algorithms, discover new variables that are indicative of driver risk and new profitable customer segments before their competitors are able to do so (Cooper, 2015).

### 3. Senior management are committed to analytics. According to Davenport & Harris (2007) “Progressive’s top managers relentlessly hunt for undiscovered insurance markets … that have been ignored by companies that perform only conventional data analysis”. Davenport, Harris & Morison (2010) add that this commitment is ‘baked’ into the organization’s culture because after using analytics for so long, data has become central to the way decisions are made.

### 4. The company demonstrates large-scale ambition. Progressive was the first company in the automobile insurance industry to identify and/or adopt analytical methods to segment potential customers in terms of risk (Davenport, Harris & Morison, 2010). For example, the company identified that a consumer’s credit score is inversely related to the likelihood of a car accident, and used this information to inform consumer risk assessments (Davenport, Harris & Morison, 2010). This analytical approach, which Progressive continues to refine today, demonstrates a willingness to tie the future success of the company to their analytical strategy (Davenport & Harris, 2007).

### Application of analytics to other operational/functional areas

Another area that could benefit from the application of analytics, which Progressive is currently exploring, is the combination of advertisements that is most likely to influence a consumer to purchase insurance (Overby, 2014). The company expects that this will create “… a competitive advantage by using data to make smarter more efficient advertising buys” (Overby, 2014). Progressive is also using analytics to explore options regarding the best time to advise a consumer about other product offerings as they shop (Norton, 2015). Progressive’s Chief Information Officer, Ray Voelker noted that “the challenge lies in taking information about customers while they’re on the site, quickly combining it with other data sets, then using decision algorithms to determine the best … course of action … before they leave” (Norton, 2015). Norton (2015) also noted that Progressive plans to use analytics to identify fraudulent claims and strengthen customer loyalty.

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