Sports Analytics III

Produced by Dr. Mario
UNC STOR 538

Industry Past

- **Sports Analytics Use Survey (2013)**

- **Sample of 27 People (NFL, MLB, NBA, EPL)**

- **How Many Different Sources?**
  - **1-2 (6.7%)**
  - **3-4 (33.3%)**
  - **5-6 (13.3%)**
  - **>6 (46.71%)**

Industry Past

- **How Much Data is Centralized?**
  - **All (31.3%)**
  - **Most (37.4%)**
  - **Some (31.3%)**

- **How Much Data is Dependent on One Person?**
  - **Some (50.0%)**
  - **Most (43.7%)**
  - **All Data Centralized (6.3%)**

Industry Past

- **Is Data Checked for Errors?**
  - **Always (31.3%)**
  - **Usually (37.5%)**
  - **Sometimes (18.8%)**
  - **Occasionally (6.1%)**
  - **Rarely (6.3%)**

- **How Many Database Programmers are Employed?**
  - **0 (37.5%)**
  - **1-2 (50.0%)**
  - **3-4 (0.0%)**
  - **>5 (12.5%)**

Industry Past

- **How Many Statistical Analysts are Employed?**
  - **0 (20.0%)**
  - **1-2 (66.6%)**
  - **3-4 (0.0%)**
  - **>5 (13.3%)**

- **Roadblock: Difficulty Identifying Strong Applicant**

- **Difficulty in Both Hiring and Evaluating**

Industry Past

- **Clear Process for Hiring/Evaluating Analysts**
  - **Strongly Agree (13.3%/14.3%)**
  - **Somewhat Agree (13.3%/14.3%)**
  - **Neutral (26.7%/28.6%)**
  - **Somewhat Disagree (13.4%/21.4%)**
  - **Strongly Disagree (33.3%/21.4%)**

- **Analytic Resources in Line with Strategic Game Plan**
  - **Strongly Agree (26.7%)**
  - **Somewhat Agree (33.3%)**
  - **Neutral (33.3%)**
  - **Strongly Disagree (6.7%)**

Industry Present

- **Value Placed on Sports Analytics**

  - **Global Sports Industry $600B-$700B (2018)**
  - **Include Business Dedicated to Sports $1.3T (2018)**
  - **Global Sports Analytics Market in 2020 = $2.2B**
  - **Expected CAGR between 2020 and 2028 is 21.8%**
  - **Projection in 2028**

    $Projection\ in\ 2020 = 2.2*(1+CAGR)^{\wedge}8 = 10.66$

$2.20B → **$10.66B**

2020   2028

Projections in 2028 According to MarketWatch.com

Industry Present

- **Three Reasons for Projected Growth Rate**

  - **Demand for Performance Tracking of Players**
  - **Demand for Solutions for Determining Player Value in Player Transfers**
  - **Demand in Analyzing Data from the Rise in Sports Technology Investments**

Analysis from Emergen Research

Industry Present

- **Modern Applications of Sports Analytics**

  - **Helping the Team Win**
    - **Automated Video Analysis (Lincoln City, UK Football)**
    - **3D Depth Camera (NBA)**
    - **Wearable Technology (NBA, NHL)**

  - **Improving the Fan Experience**
    - **Analysis of Digital Engagement**
    - **Sentiment in Social Media**
    - **Analysis of Fan Behavior in Stadium (New England Patriots)**
    - **Wireless Internet and Phone Apps**
    - **Apps Supply Game Analytics, Parking Information, Promotions, and Traffic Information to the Fans (NFL)**

Industry Present

- **Modern Applications of Sports Analytics**

  - **Benefiting Other Stakeholders**
    - **Tracking Fan Behavior Outside the Stadium**
    - **Telecommunication, Retailers, Payment Providers, Ticket Agencies, and Sponsorships**
    - **Adapt to Quick Changes in Consumer Behavior**

  - **Optimizing the Back-Office**
    - **HR Practices**
    - **Game Scheduling**
    - **Supply Chain Management and Logistics**
    - **Marketing and Promotions**
    - **Procurement of Goods and Services**

Industry Present

- **Modern Applications of Sports Analytics**

  - **Advancing Sports Gambling**
    - **Supreme Court Ruling Previous Statute Violated 10th Amendment (Murphy v. National Collegiate Athletic Association)**
    - **States Free to Legislate Gambling**
    - **Improvement of Gambling Products**
    - **Data Aggregation and Visualization for Bettors**
    - **Develop Daily Fantasy Sports**
    - **Global Market worth $203B in 2020 (Statista.com)**
    - **US Revenue Forecasted to reach $2.5B in 2021 (Statista.com)**

Your Industry Future

- **Prerequisites by Howard Hamilton (Soccermetrics)**

    - **Technical Skills**
        - **Mathematics (Linear Algebra/Probability Essential)**
        - **Statistics (Frequentist and Bayesian Perspectives)**
        - **Machine Learning (Supervised and Unsupervised)**
        - **Programming (R/Python, Data Structures, OOP)**
        - **Databases**
        - **Visualization**

    - **Socials Skills, Ethics, and the Law**

    - **Knowledgeable About All Aspects of the Sport**

Your Industry Future

- **Real Jobs (Indeed)**

  - **Manager, Fan Analytics for NHL**
    - **Data Visualization (Tableau)**
    - **Understand Sports Industry Standard Metrics**
    - **Python, R, SQL, or SPSS**
    - **Expert in Excel**

  - **Business Intelligence Analyst for YinzCam**
    - **Business Analytics in Sports**
    - **Databases, Machine Learning, Statistics, and Tableau**
    - **Masters Degree + Many Years of Experience**

Your Industry Future

- **Real Jobs (Indeed)**

  - **Analyst, Sports & Entertainment for CLEAR**
    - **Business Analytics**
    - **Organize, Analyze, and Report on Data**
    - **Forecasting for Budgeting**
    - **Data Visualization (Tableeau)**
    - **Quantitative and Financial Modeling Skills**

  - **Analytics Manager for FanDuel**
    - **Degree in Quantitative Field (Math, Stats, Econ, etc.)**
    - **Proficiency in SQL and Excel**
    - **R, Python, Spark**
    - **Data Visualization in Tableau**

Your Industry Future

- **Real Jobs (Indeed)**

  - **Director, Business Intelligence for Sporting KC**
    - **Contributor to Sports Marketing Department**
    - **Proficiency with Data Structures (SQL)**
    - **Proficiency with Data Visualization (Tableau)**

  - **Junior Analyst, Sports Analytics for FS&E**
    - **Global Sports Data, Technology and Analytics Consulting**
    - **Analyze and Interpret Complex Datasets**
    - **Python, R, SQL, VBA, SPSS**

Your Industry Future

- **Real Jobs (Indeed)**

  - **Performance Data Analyst for Detroit Red Wings**
    - **Master's Degree in Data Science**
    - **Collection and Interpretation of Performance Data**
    - **Basic Statistical Analysis Techniques**
    - **R or Python**

  - **Research Analyst for Bleacher Report**
    - **Mine, Analyze, and Deliver Data and Insights**
    - **Quantitative Research Experience**
    - **Experience with Statistical Analysis**
    - **R, SQL, SPSS, Tablewau**

Your Industry Future

- **Conferences**

  - **Carnegie Mellon Sports Analytics Conference**
  - **Great Lakes Analytics Conference**
  - **MathSport International**
  - **MIT Sloan Sports Analytics Conference**
  - **New England Symposium on Statistics in Sports**
  - **Rochester Institute of Technology Sports Analytics Conference**
  - **Sports IDEAS Symposium**
  - **Uconn Sports Analytics Symposium**

Final Inspiration

Defense wins championships.
Offense wins contracts.
Be offensive.

- Mahatma Mario