



Midseason Talent Acquisition Strategy Executive Summary



New York Mets

Midseason Talent Acquisition Strategy Executive Summary

Prepared for Don Wedding, GM
August 21, 2018

New York Mets Analytics

Alexander Booth, Justin Benson, Noah Lieberman, Michael Pallante,
Thomas Popeck Spiller



Midseason Talent Acquisition Strategy

Executive Summary

Problem Statement

Dear Prof. Wedding,

As the GM of the New York Mets, we are pleased to provide you with our recommendations for the Midseason Talent Acquisition Strategy. As described in our Project Goals and Initial Findings reports, the purpose of this project is to provide ideas and recommendations for developing the future on-field product of the Mets through a strengthening of youthful talent and potential in the minor leagues. As the trade deadline is approaching, we believe it is time to sell off underperforming veteran assets at the Major League level.

The Seattle Mariners have expressed interest in several major league players including infielders Asdrubal Cabrera and Todd Frazier, outfielders Jose Bautista and Jay Bruce, and pitchers Noah Syndergaard and Jacob Degrom. Using a robust data infrastructure from a combination of internal databases along with reputable supplementary sources, we plan to develop predictive models to forecast the likelihood of Mariner minor league talent reaching the Major Leagues and sustaining success. Specifically, we are looking to add offensive talent due to the current poor run production. To do so, we will focus solely on the likelihood of position players making the MLB and their projected offensive WAR (wins above replacement).

Using our model output, we will be able to identify players to target and cross reference against how the Mariners rank them according to external prospect rankings. We will provide initial recommendations along with dashboard and mobile applications to provide your front office team with trade scenario modeling techniques.

We look forward to receiving your feedback and helping return the Mets to contention.

Sincerely,

New York Mets Analytics

Alexander Booth
Michael Pallante

Justin Benson
Thomas Popeck Spiller

Noah Lieberman



Midseason Talent Acquisition Strategy

Executive Summary

Summary of Project Output

Through 9 weeks of thorough data discovery, transformation, and analysis, our team has created two predictive models to forecast a prospects' likelihood to reach the major leagues (for at least 3 full seasons) as well as what their career production will be (measured by Wins Above Replacement, or WAR). The output of these models will be used to generate recommendations for prospects to target in the Seattle Mariner Organization

“Make-It Model”

After trying multiple models and different formats of the data, by measuring the models based on generating the best identification of players that will and did make it and players that wouldn't and failed to, the Logistic and SVM models were outperformed by the Random Forest model. Results are shown in Figure 1. Rookie League (Rk) players have the lowest likelihood to “make it” but have several stand out players. As we move up in the Minor League levels, the distribution improves and players are generally more likely to make it. This is logical as the players in higher levels are supposed to be closer to the Major League caliber.

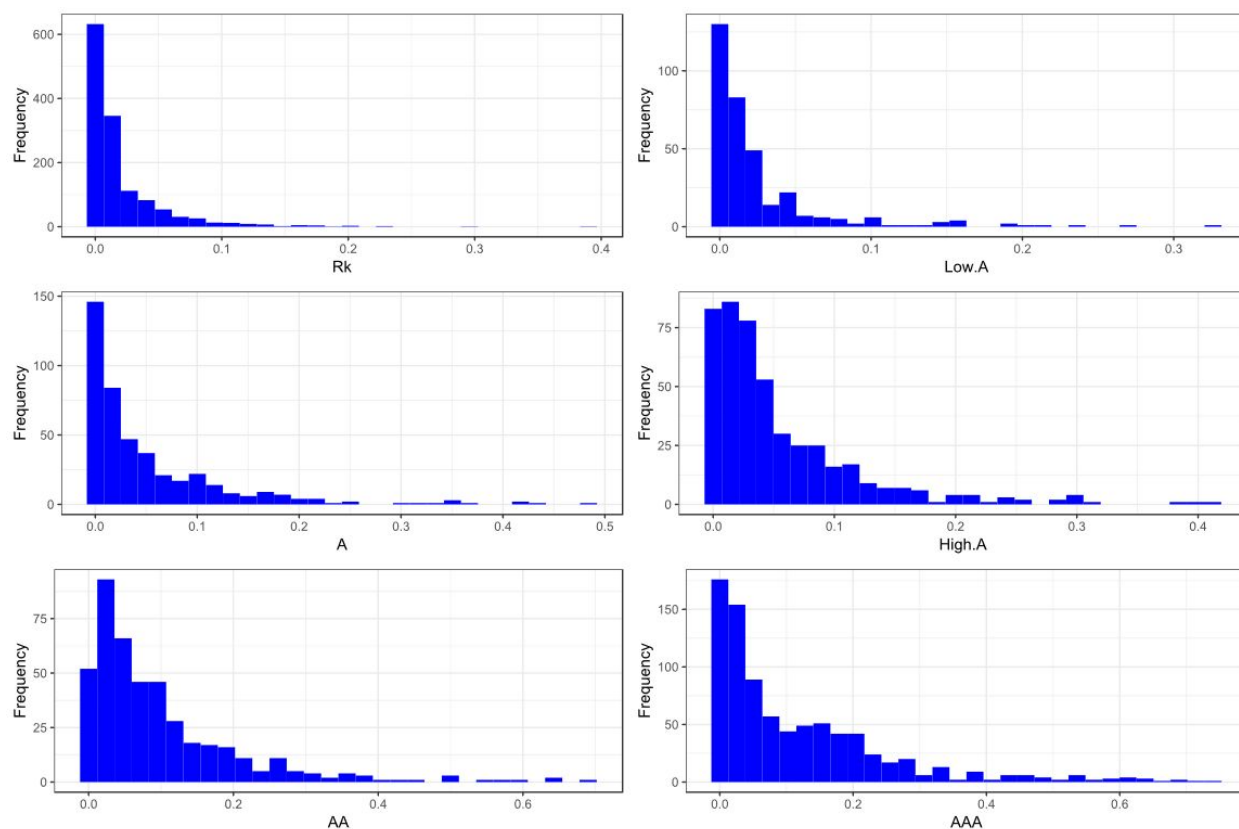


Figure 1: “Make It” Output by Level



Midseason Talent Acquisition Strategy

Executive Summary

Value (WAR) Model

Figure 2 displays actual versus predicted career WAR values generated from a gradient boosting model, per level. Overall, our model does a great job of predicting career WAR of less than 20, as well as career WAR of players in the upper echelon of AA and AAA. As can be expected, there are several outliers in the data. By combining our model output with expertise from the scouting department we have a greater likelihood of catching these players.

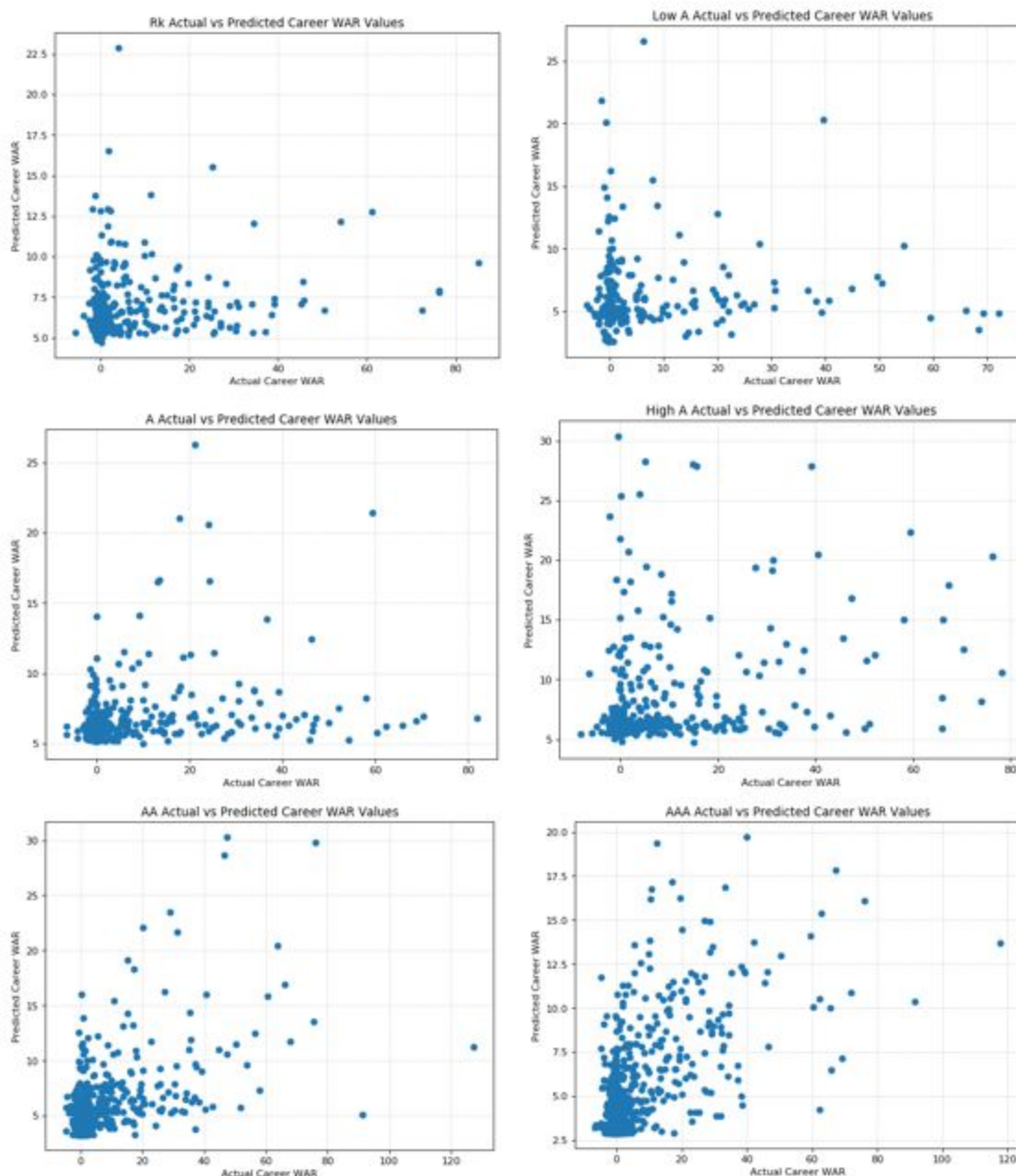


Figure 2: Actual vs Predicted Career WAR Values by Level



Midseason Talent Acquisition Strategy

Executive Summary

Expected Value of Prospects

With both the likelihood of a prospect of making it (pMade it) and their projected career WAR (pWAR), we can properly evaluate the value to the organization and make recommendations based on an expectation of their value generated by multiplying pMade it by pWAR, generating expected career WAR (eWAR).

Recommendations & Deliverables

Model Recommendations

Utilizing the models, we ranked the 111 available Mariner prospects. Figure 3 provides a rank order of the top players by eWAR and includes their likelihood to reach the Major Leagues along with their pWAR.

Given these results it would be wise to consider Braden Bishop (OF), Gareth Morgan (OF), and Seth Mejias-Brean (1B-3B) as safer prospects to trade for. If the first two are available for players that Peter Alonso (Mets - IF) can replace, then we would trade our infield for outfield prospects, and for Seth, if we could replace the current player with Anthony Domino (C) or Travis Taijeron (OF) that could help the team develop.

Top 15 Mariners Prospects by eWAR					
Player	Position	Level	pWAR	pMade it	eWAR
Braden Bishop	OF	AA	6.2	60%	3.7
Alexander Campos	SS	Rk	17.3	18%	3.1
Gareth Morgan	OF	A+	8.8	35%	3.0
Eric Filia	OF	AAA	17.0	15%	2.5
Donnie Walton	SS	A+	5.9	38%	2.2
Tyler O'Neill	OF	AAA	9.0	21%	1.9
Gianfranco Wawoe	2B	AAA	10.3	16%	1.6
Seth Mejias-Brean	1B-3B	AAA	4.9	34%	1.6
Ryan Scott	C	AAA	11.9	14%	1.6
Joey Curletta	RF-OF	AA	4.4	32%	1.4
Andrew Aplin	OF	AAA	4.3	30%	1.3
Jack Larsen	OF	Rk	7.1	18%	1.3
Ryan Costello	IF	Rk	6.9	17%	1.2
Tyler Marlette	C	AA	4.0	28%	1.1
Christopher Torres	SS	A-	7.1	13%	0.9

Figure 3: Mariner Player Rankings



Midseason Talent Acquisition Strategy Executive Summary

Dashboard & Mobile App Creation

To aid in the management's use of the models, we have developed a dashboard application which allows you to slice and dice the populations to get to an ideal list of prospects. As shown in the snapshot below, we have made available the prospect pool, ranked by eWAR which links to a player page, showcasing a wide variety of metrics to help in making your trade decisions. This dashboard is also viewable via mobile device.

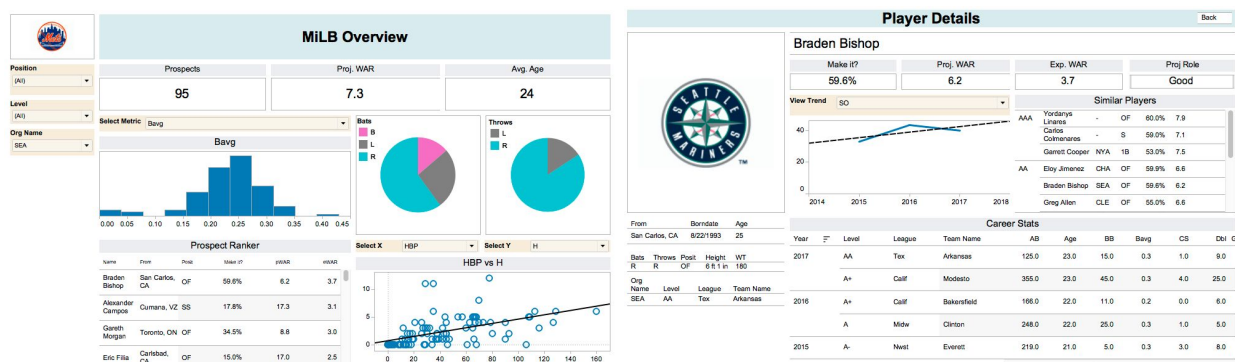


Figure 4: Dashboard Snapshot

Conclusion

Although the New York Mets are in the midst of a disappointing season, there is much hope for the future. The team is only a few years removed from a trip to the world series, and the pitching rotation is mostly still under control. With an infusion of offensive talent, we expect a swift return to contention. The scouting department should focus their efforts on prospects identified from our models within the Mariners Minor League system. These players provide the greatest opportunity to bring value to our Major League roster in the future.