

2019

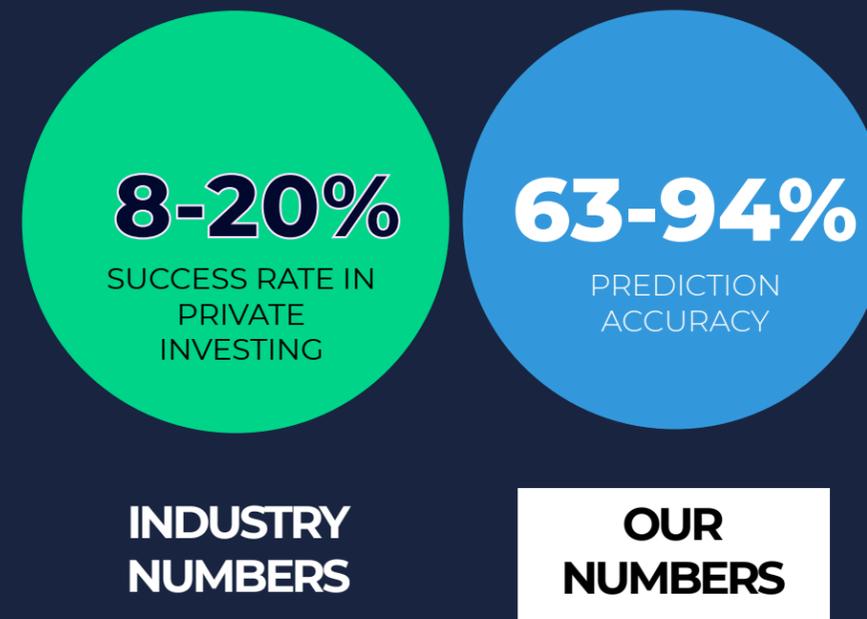
AI SUCCESS PREDICTION FOR PRIVATE INVESTORS

Prepared by
Boss Insights

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FOREWORD



Unlike public markets, there is no standardized report card for private businesses -- no common way to describe their potential chance of success.

Boss Insights created machine learning models that predict company success for private investors. Our models have been verified by an independent academic data science team at Ryerson University.

The current success rate of the private investment community is **8 to 20 percent**. Boss Insights is not making a claim that our model is at least **43 percent** better than the past industry performance. Rather, we assert that Data-Analytics and Artificial Intelligence have a role to play in de-risking investments by converting mass amounts of data to insights leading to better results.

UNDERSTANDING THE ECOSYSTEM

2018 Key Trends

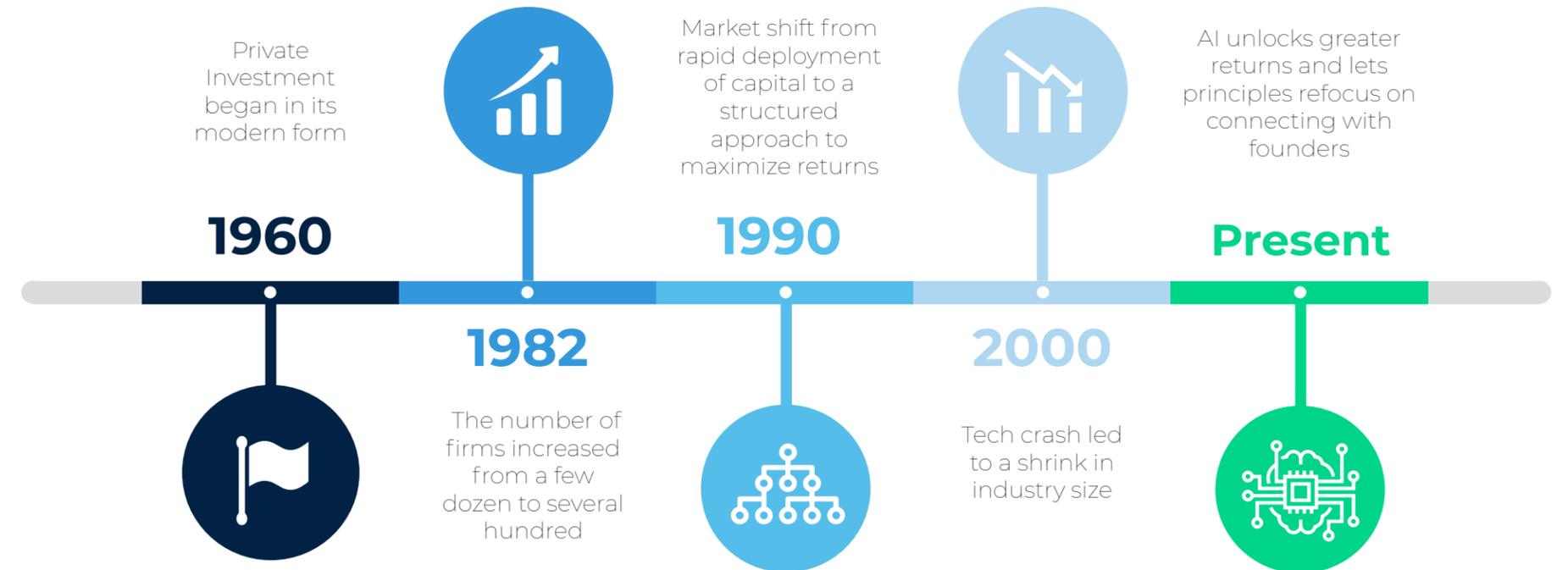


Limited Information Available



Four most reputable sources of information regarding success rates in the private investment industry. Our team discovered only five peer-reviewed research reports, none of which offer the investor the flexibility to use their own algorithms.

History of private investment



INITIAL DATASET

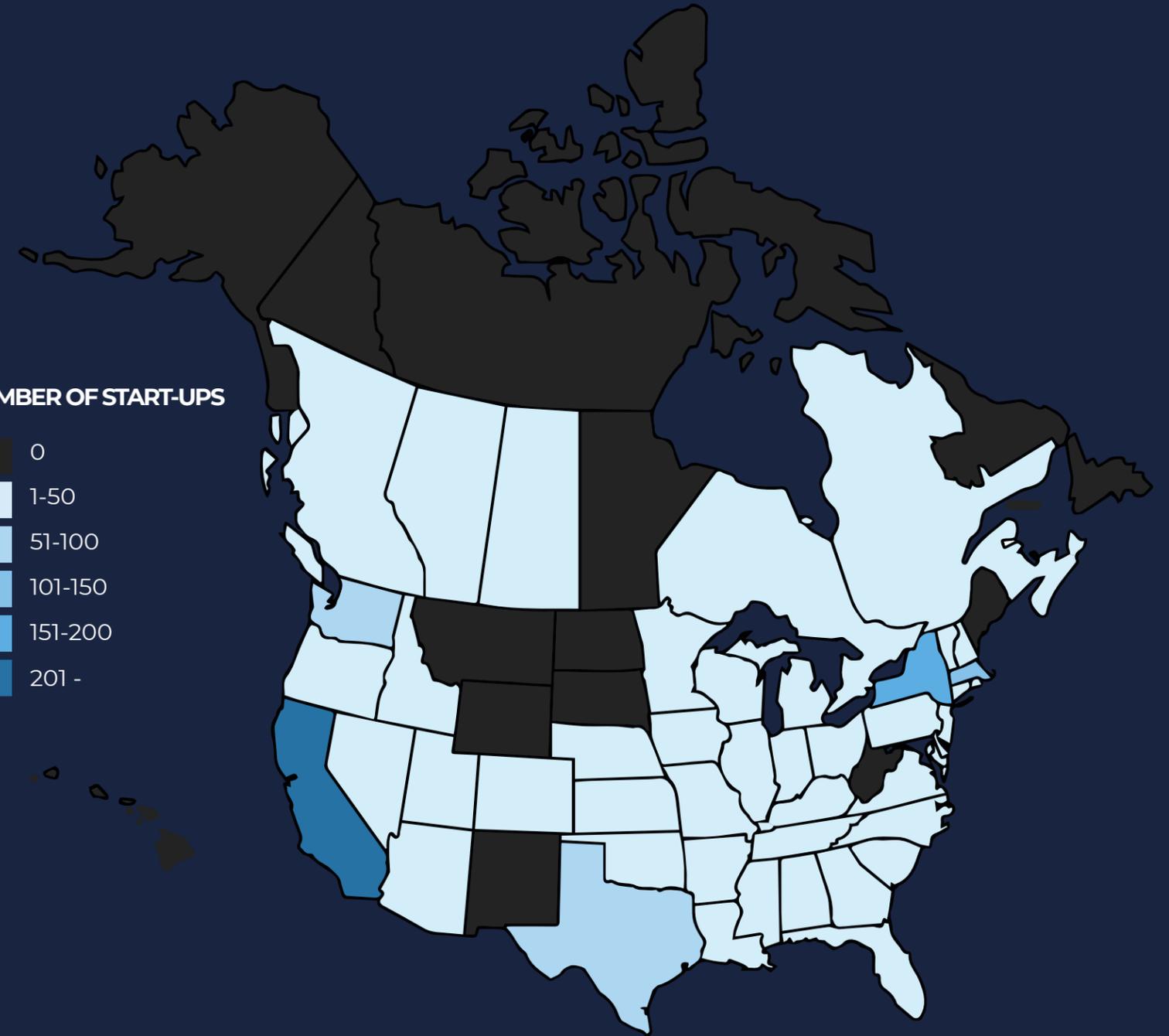
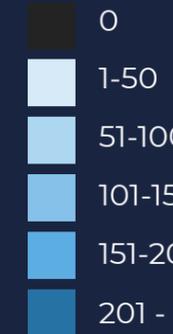


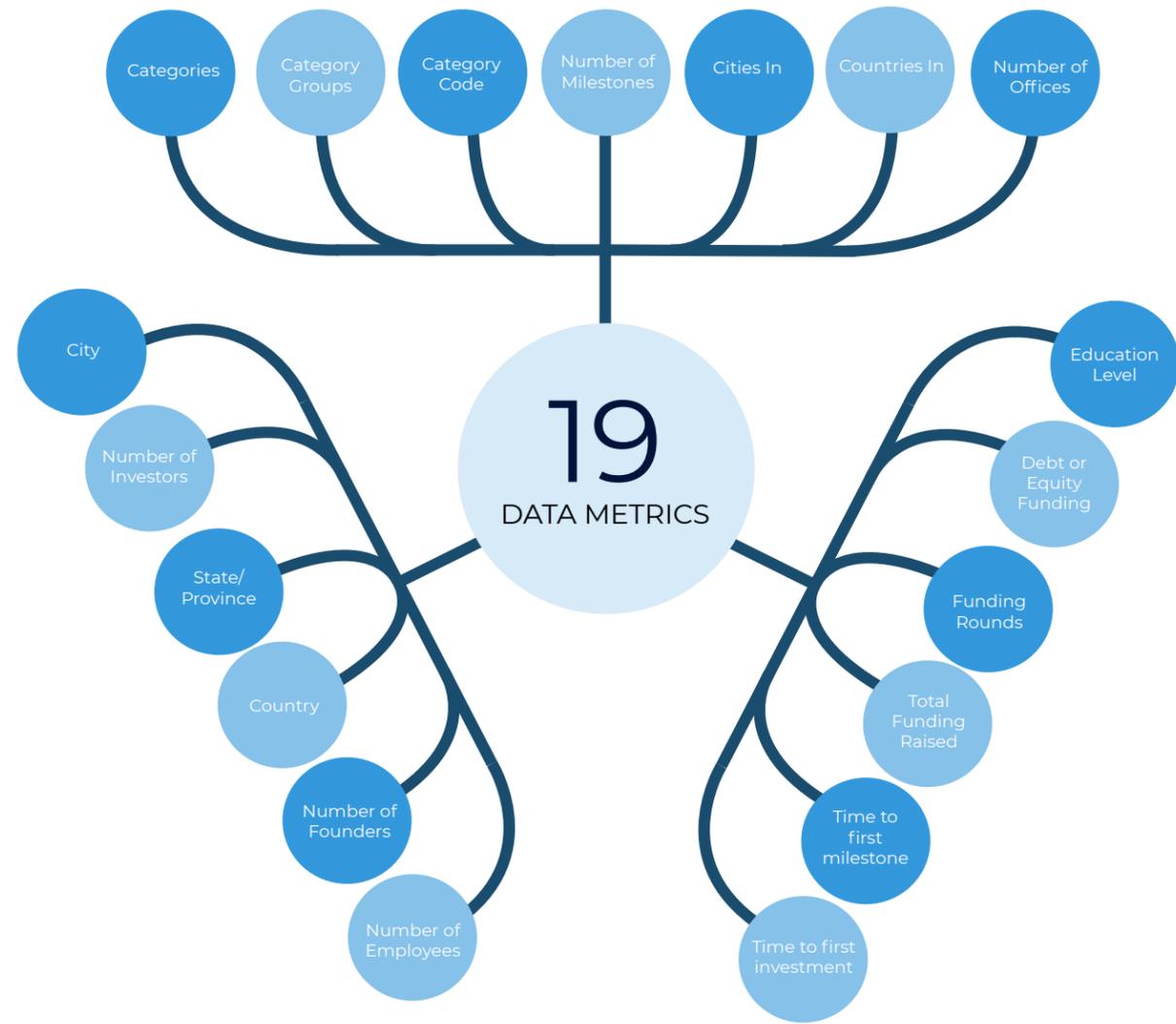
Transforming 2013 Data Sources

Boss Insights gathered datasets over a five year range collected from our data partners. We built the models to predict how the companies would perform five years later.

Notes on data science approach: Fundamental data science procedure requirements including applying appropriate cleaning and normalization steps, imbalanced data set treatments, k-fold cross validation, various classification techniques and measuring performance by different evaluation metrics.

NUMBER OF START-UPS





INPUT DATA

OUTPUT INSIGHTS



EXIT STATUS



HEADCOUNT GROWTH



FUNDRAISING STATUS

PREDICTION ACCURACY

By looking at company data in 2013 and building machine learning models, Boss Insights was able to predict the future state of a company in 2018 with an accuracy range of 63 to 94 percent.



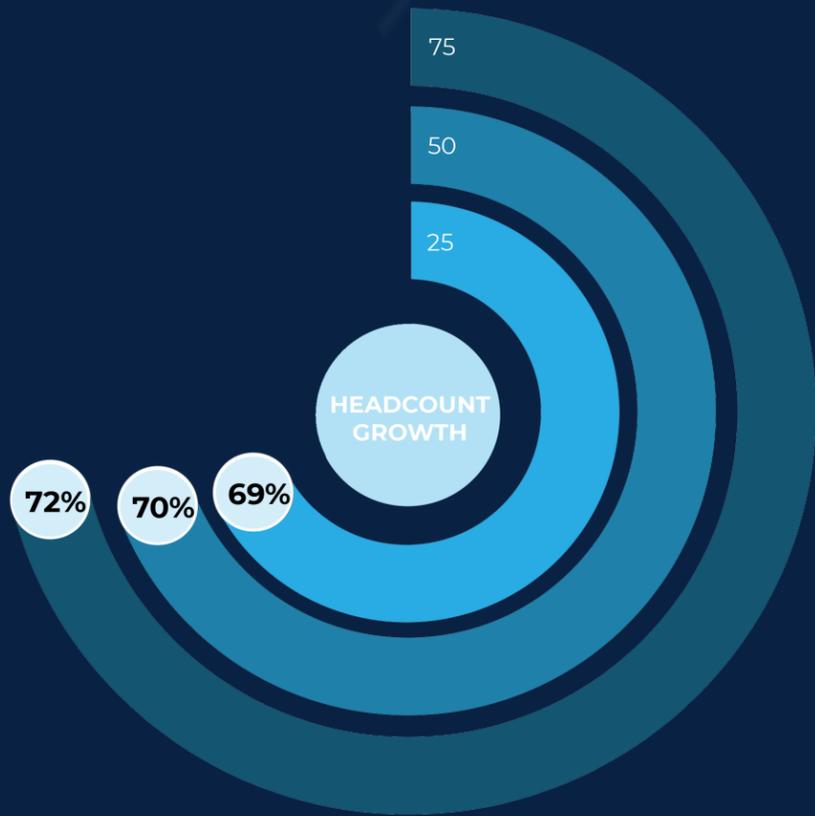
Funds Raised - Prediction Accuracy

- \$5 million - 77% accuracy
- \$25 million - 74% accuracy
- \$45 million - 79% accuracy



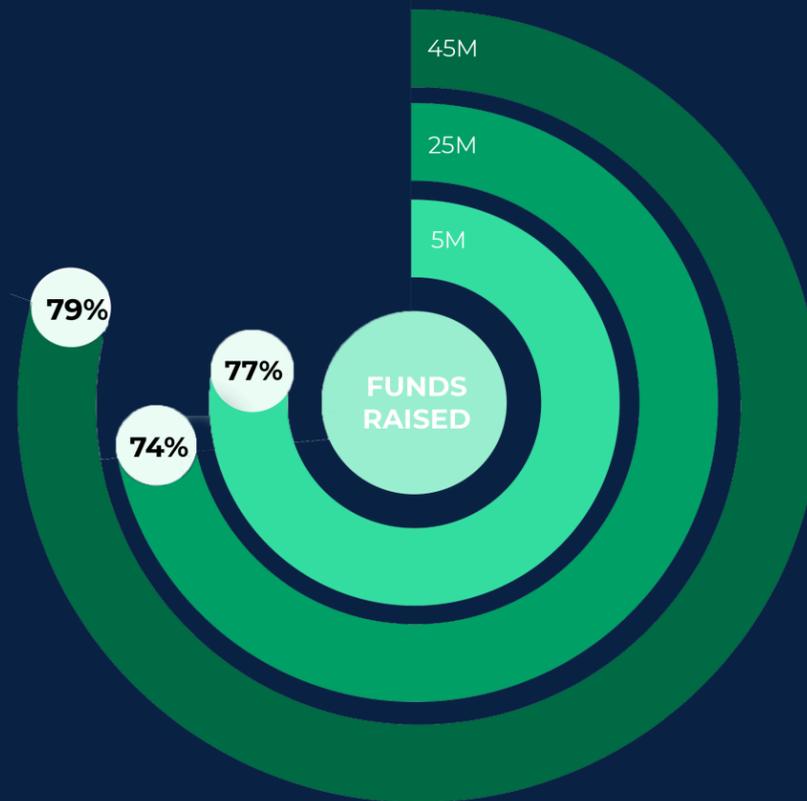
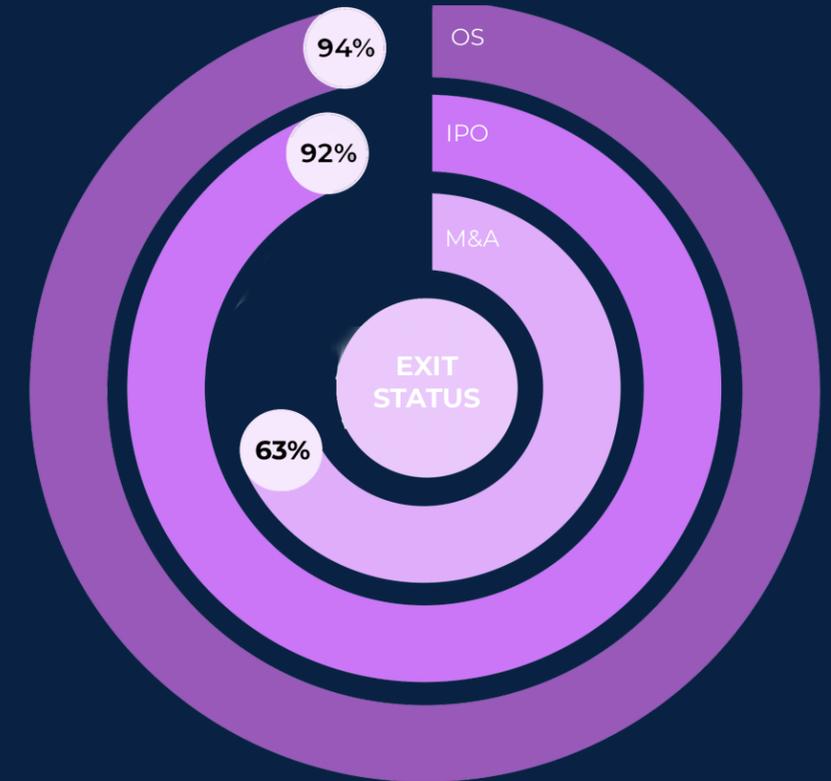
Headcount Growth - Prediction Rates

- 25 employees - 69% accuracy
- 50 employees - 70% accuracy
- 75 employees - 72% accuracy

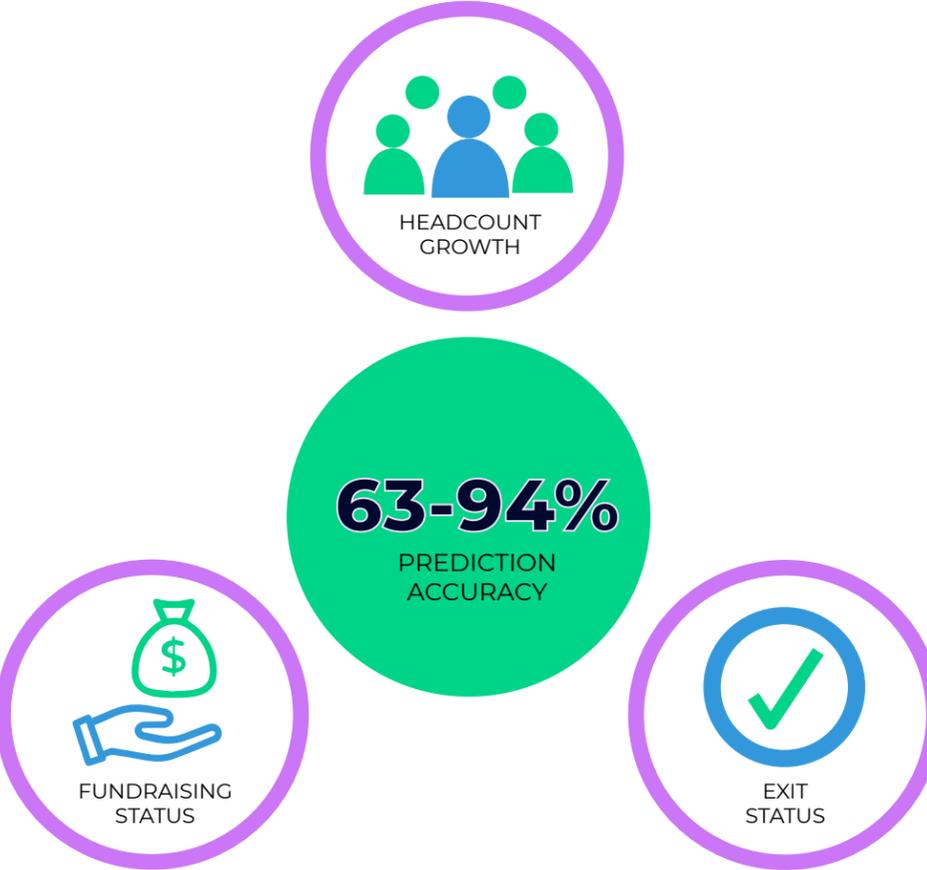


Exit Status - Prediction Status

- M&A - 63% accurate
- IPO - 92% accurate
- Operating Status - 94% accurate



OPPORTUNITY TO IMPROVE THE ECOSYSTEM



Until now, gathering data on private companies and the industry as a whole has been costly and inaccurate. Two innovations were required to address this problem. The first, was to move from manual forms of data entry to automatic data downloads from cloud software. The second was to build machine learning models to gain insights from the vast amounts of data being collected. Boss Insights invested several years and built these innovations to support growth in the private investment ecosystem.

Our objective was to represent the private investment industry as accurately as possible. Existing studies predefined success and failure. However, the industry expects the flexibility to perform their own propriety analysis on data. To better represent the existing market, Boss Insights created AI models to allow for this flexibility by predicting company results, rather than outcomes.

Our goal was to match industry success rates. We far exceeded it. Even so, this is only the beginning of what can be learned to improve the ecosystem.

ACKNOWLEDGEMENTS

Data Partners



Research Teams



Funding Support



Accelerator Network



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