



# Demanding Better Labor Decisions

Many potential ways of applying AI to people-related issues have been identified, but the simple question 'how many people should we have working?' represents a surprisingly practical and profitable opportunity.

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## ABOUT THE AUTHORS

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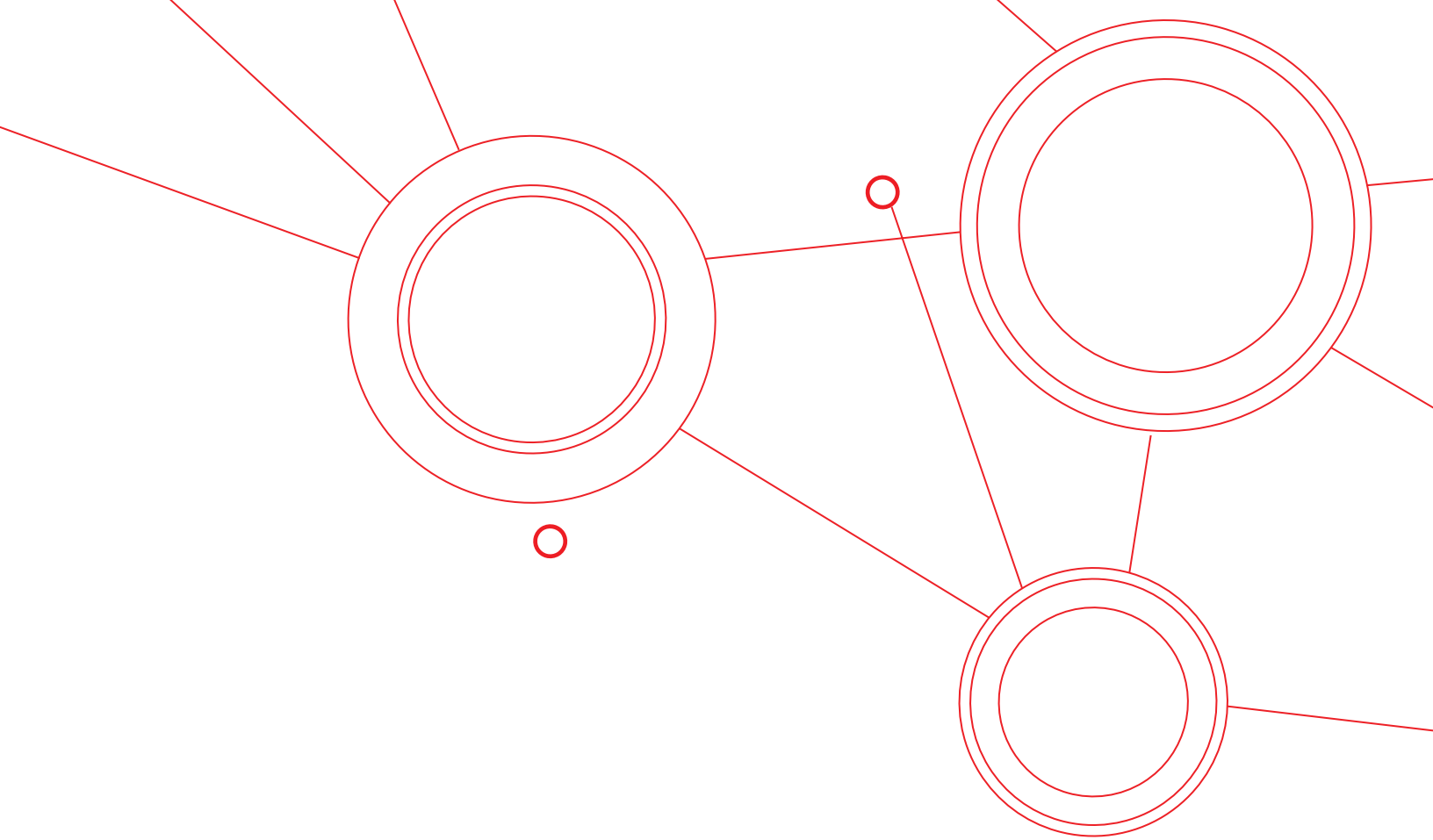
**Tom Seddon**  
CEO, Predion.ai  
(by Foundry.ai)

Tom leads Predion.ai. Prior to joining Predion.ai, Tom was Chief Marketing Officer for Extended Stay America, CMO for InterContinental Hotels Group and CEO of the Subway Franchisee Advertising Fund Trust. Tom holds a Masters in Data Science from the University of California, Berkeley and a Masters in Electrical and Electronic Engineering from the University of Bath, UK.

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**Scott Setrakian**  
Vice Chairman,  
Foundry.ai

Scott leads Foundry.ai's San Francisco office. Prior to joining Foundry.ai, Scott was co-founder and Managing Director of Applied Predictive Technologies. Previously, Scott sat on the Board of Directors of Mercer Management Consulting, and ran the firm's global Oil, Gas, Chemicals, Pharmaceuticals and Process Industries Consulting Group. Scott received an MBA and an A.B. in Human Biology from Stanford University. He sits on the Board of Directors of the Buena Vista Funds, the William Saroyan Foundation, and the San Francisco Zoo.



## INTRODUCTION

Experts have talked for some time about the many ways that AI can be applied to a variety of HR and people issues. Current applications range from automating administrative tasks with chatbots to analyzing interview videos as a screening mechanism for candidates to spotting subtle signals that predict employee retention risk.

However, one area that hasn't historically received as much attention is the core question of how many – and which – people are needed by a business at any given time. It may come off as a relatively basic decision and not worthy of the glitz associated with Artificial Intelligence ('AI'), but an increasing number of companies are recognizing the significant profit leverage associated with the 'right' answer and are deploying new technologies to enhance their decision-making in this area. Our work with leading multi-unit companies such as restaurant chains, hotels, retailers and clinics demonstrates that this is a particularly applicable area for what we call "Practical AI."

## **PRACTICAL AI**

“AI” has arguably become today’s most ubiquitous and overused business buzz-phrase. The AI phenomenon is fueled by ongoing advances in processing power and data storage. Together, these have facilitated the emergence of machine learning, machine vision and natural language processing as powerful analytical tools. While the public imagination is drawn to creative applications such as self-driving cars and mechanical Jeopardy champions, AI is being used to create value in less glamorous ways. By applying advanced math to large integrated datasets to improve fundamental business processes, “Practical AI” is attacking business problems as we humans would do if we had unlimited time, access to complete data, and computational infallibility. It is most likely to succeed when applied to situations where large volumes of repeated decisions are being made, across time or a network of locations, and under conditions of uncertainty.

## **DEMAND-BASED DECISION MAKING FOR LABOR**

An important emerging application of Practical AI is improving decisions related to staffing levels. There has always been a drive for operational efficiency and effectiveness in the labor domain, as labor costs comprise about 60% of all corporate expenses. This pursuit is especially challenging in today’s tight labor market – one in which employees prefer to know their timetables in advance, scheduling rules are more restrictive, and the cost of hiring new people is higher than ever.

While the value of good staffing decisions has always been significant, it has become more difficult to predict demand in today’s environment and staff accordingly. Altered shopping habits, new business models and competitor types, and different influence drivers have made many legacy approaches to predicting customer behavior (and therefore labor needs) less effective.



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Additionally, we often see this topic considered as just a labor scheduling problem. While building shift schedules, assigning people to shifts and managing shift swaps are all indeed processes that can be automated, the highest point of leverage is the decision regarding how many people (and of what position) should be scheduled where and when.

This is true because labor is not just a cost. There can be a direct relationship between staffing levels and the realized demand. Consider a coffee retail store at the busy morning hour. If the counter is under-staffed, potential customers might be turned off by lengthy lines and opt to find coffee elsewhere. Conversely, extra staff in the more quiet afternoon hours can be a dead-weight cost, representing a direct hit to the bottom line.

To be most effective, AI applied to labor decision-making needs to:



Predict both the most likely expected customer demand and the probability of actual demand being meaningfully above or below



Use data to understand the economic trade-offs of staffing too high or too low versus actual demand



Make a 'best bet' decision that combines knowledge of these two factors



Be able to improve its knowledge and performance over time

In working with many large global enterprises, we have observed that analyzing the economic trade-off (point 2 above) is often not considered as deeply as the forecasting step, but it is critical. Examples of typical trade-offs are:

- A restaurant needs to balance the cost risk of having more staff than necessary with the revenue impact of not having enough staff to service demand or upsell
- A retailer wants to operate efficiently but not lose sales opportunities at peak demand periods due to long lines or an inability to help customers
- A service business wants to minimize staff downtime but make enough appointment slots available to customers to capture potential demand

## GETTING PRACTICAL

Our experience is that labor-level decision making is a strong candidate for successful Practical AI because it typically involves thousands of repeated decisions a week and data is usually readily available. However, success is much more likely when some simple rules are applied:

### **1** Do it fast

Our belief is that successful AI investments should create incremental free cash flow within 12 months. Targeting the specific decision of 'how many people to staff when' gives a manageable focus and ensures that data can be assembled, models developed and pilots run in 6-8 months. It is also generally straightforward to establish baselines and success measures.



## **2 Incorporate the human**

Operational managers care deeply about decisions related to staffing, so it's important to ensure they receive information in an understandable and useful way. These individuals may have knowledge that the system doesn't have, meaning it is critical to put them in the decision loop, along with tracking systems to measure where and how such human inputs are impacting performance.

## **3 Assemble the right capabilities**

Getting quick impact requires the right set of technical skills on the internal team, or in the external partner. Lightweight cloud-based prediction technology, sitting outside of legacy systems, and with the simplest possible integration to existing data stores and operational systems is key. It is also essential to combine expertise in relevant technologies (e.g. manipulating large and diverse datasets, natural language processing and machine vision) with a strong practical understanding of real-world business problems and solutions.

## **CONCLUSION**

Improving decisions related to labor levels is a ripe opportunity for the application of artificial intelligence. Further, recent technological advances offer the potential for material performance improvement that was not possible even a few years ago. We have seen executives who apply the guidelines in this paper able to capture significant financial value in short time lines. We hope this stimulates your interest as you consider how to deploy AI pragmatically within your organization.



Foundry.ai

1920 L St NW, Suite 800  
Washington, DC 20036

[www.foundry.ai](http://www.foundry.ai)