

JAMES C. SESIL

APPLYING ADVANCED
ANALYTICS
— TO —
HR MANAGEMENT
DECISIONS



METHODS FOR SELECTION, DEVELOPING
INCENTIVES, AND IMPROVING COLLABORATION

Applying Advanced Analytics to HR Management Decisions

Applying Advanced Analytics to HR Management Decisions: Methods for Selection, Developing Incentives, and Improving Collaboration

Table of Contents

Contents

Preface

Introduction

Chapter 1 Challenges and Opportunities with
Optimal Decision Making and How Advanced
Analytics Can Help

1.1 How We Make Decisions and What Gets in the
Way

1.1.1 Intuition Versus Analytical Thinking

1.1.2 Poor Intuitive Statisticians

1.1.3 Understanding Human Nature

1.1.4 Biases and Decisions

1.1.5 Big Data and Information Overload

1.1.6 The Problem with Certitude

1.1.7 Advanced Analytics Does Not Care Who It Annoys

1.1.8 Types of Decision Making

1.2 Rise of the Machines: Advanced Analytics and
Decision Making

1.2.1 Advanced Analytics

Table of Contents

1.2.2 Predicting Outcomes

1.2.3 Improper Linear Models: Combining Expert Intuition with Analytics

1.2.4 Artificial Intelligence and Machine Learning

1.3 Human and Machine: The Ideal Decision-Making Team

1.3.1 A Word About AI Tools

Chapter 2 Collaboration, Cooperation, and Reciprocity

2.1 Human Nature and Human Science

2.1.1 Reciprocity and Fairness

2.1.2 Selfish, Greedy, Lazy, and Dishonest

2.1.3 Human Nature 2.0

2.1.4 Fierce Cooperation

2.1.5 Collaboration

2.1.6 Hard Wired to Share What We Know

2.1.7 Collective Intelligence

2.1.8 Asymmetric or Private Information

2.1.9 Game Theory 101

2.2 The Power of Collaboration: The Scandinavian Model

2.2.1 What Kinds of Organizations Could Benefit from a High Degree of Collaboration?

2.2.2 The Benefits of Collaboration

2.2.3 The Bottom-Line Impact of Participative Decision Making

2.2.4 Organizational Culture

2.2.5 Optimal Incentive Contract for Collaboration: Sharing Control and Return Rights

Table of Contents

2.2.6 Models of Collaboration

2.2.7 The SAS Institute

2.2.8 EMC|One

2.2.9 Boston Scientific

2.3 Advanced Analytics and Collaborative Decision Making

2.3.1 Challenges and Opportunities with Participative Decision Making

2.3.2 Software, Advanced Analytics, and Cooperation and Collaboration

2.3.3 Deep Q&A Expert Systems

Chapter 3 Value Creation and Advanced Analytics

3.1 The Wealth of Organizations and What Advanced Analytics Can Do

3.1.1 Information Capital

3.1.2 Constant and Unrelenting Experimentation

3.1.3 Gold in Them There Databases: Human Capital Data

3.1.4 Not Only Human Experts Are Prone to Biases

3.2 Value and How to Create It: Intangible Capital

3.2.1 Who Really Holds the Keys to the Kingdom

3.2.2 The Nature of the Organization

3.2.3 The Cost of Employee Turnover

3.3 Strategic Choice and Advanced Analytics

3.3.1 HCM Practice Choice and Advanced Analytics

3.3.2 Business Intelligence Alignment of HCM Practices and Policies with Business Strategy

3.3.3 Decision Science, Business Intelligence, and Implications for HCM Decisions

Table of Contents

3.3.4 Machine Learning and HR Practice Choice

3.4 Software Applications, Analytics, and HR Decisions

3.4.1 Software Options and Optimal HCM Practice

3.4.2 Enterprise Resource Planning Software

3.4.3 Talent Analytics

3.4.4 SAS Business Intelligence

3.4.5 Talent Scorecard

3.4.6 Talent Management Suites and Advanced Analytics

Chapter 4 Human Science and Selection Decisions

4.1 Optimizing Selection and Promotion Decisions

4.1.1 Performance and Selection

4.1.2 Making the Unobservable Observable

4.1.3 Eliminating Biases from Selection Decisions

4.1.4 Human Science and Employee Selection

4.1.5 Skills Shortages

4.2 Workforce Planning, Talent Acquisition, and Decision Analytics

4.2.1 Workforce Planning and Predictive Analytics

4.2.2 When Is Workforce Planning Necessary?

4.2.3 Challenges with Forecasting

4.2.4 External Big Data and Employee Recruitment and Selection

4.3 Human Science and Selection and Promotions Decisions

4.3.1 What We Have to Learn from the Use of Advanced Analytics for Player Selection in Professional Sports

4.3.2 Biases and the Selection Decision

4.3.3 Selection Tools: Augmented Biographical Survey

Table of Contents

4.3.4 Challenges with the Use of Bio Data

4.4 Applications of Human Science to Selection Decisions

4.4.1 The Application of Expert Intuition to Selection and Promotion Decisions

4.4.2 Applied Game Theory and Selection Decisions

4.4.3 Deep Q&A Expert Systems and Selection Decisions

4.4.4 Predictive Modeling and Selections Decisions

4.4.5 Applied Econometric and Machine Learning Techniques

Chapter 5 Human Science and Incentives

5.1 Human Science and Incentives

5.1.1 Incentives, Motivation, and Human Science

5.1.2 Incentive Contracts

5.1.3 Collaboration and Tournament Compensation Do Not Go Together

5.1.4 We Get What We Pay For

5.2 Human Science and Motivation

5.3 Performance Management

5.3.1 Biases Impacting Performance Management and Compensation Decisions

5.3.2 Strategy Maps and Performance Management

5.4 Applying Human Science to Incentive Contracts

5.4.1 Irrational, Cooperative, and Looking for Meaning

5.4.2 Complexity Theory and Incentive Contracts

5.4.3 The Application of Expert Intuition to Incentive and Motivation Issues

5.4.4 Applied Game Theory and Incentive Contracts

5.4.5 Deep Q & A Expert Systems and Incentive Contract

Table of Contents

Decisions

5.4.6 Predictive Modeling and Incentive Contracts

5.4.7 Applied Econometric and Machine Learning
Techniques

5.5 Application of Human Science to Specific Incentive
Issues

5.5.1 Executive Compensation

5.5.2 Other Possible Human Science Incentive
Applications

Conclusion

Garbage In...

Our Argumentative Natures

Advanced Analytics and Diagnosis of HCM Issues

The Science (and Art) of Prediction

The Challenges with Being Empirically Declarative

Decision-Making Authority and Cooperation

Sharing Control and Return Rights

Individualization

Definitions (Appendix)

Endnotes

Index