Contents

Foreword xv

Preface xix

Chapter 1 Fundamental Considerations in Business Forecasting 1

1.1 Getting Real about Uncertainty (Paul Goodwin) 3
1.2 What Demand Planners Can Learn from the Stock Market (Charles K. Re Corr) 9
1.3 Toward a More Precise Definition of Forecastability (John Boylan) 14
1.4 Forecastability: A New Method (Sean Schubert) 22
1.5 Forecast Errors and Their Avoidability (Steve Morlidge) 36
1.6 The Perils of Benchmarking (Michael Gilliland) 46
1.7 Can We Obtain Valid Benchmarks from Published Surveys of Forecast Accuracy? (Stephan Kolassa) 48
1.8 Defining “Demand” for Demand Forecasting (Michael Gilliland) 60
1.9 Using Forecasting to Steer the Business: Six Principles (Steve Morlidge) 67
1.10 The Beauty of Forecasting (David Orrell) 76

Chapter 2 Methods of Statistical Forecasting 81

2.1 Confessions of a Pragmatic Forecaster (Chris Chatfield) 82
2.2 New Evidence on the Value of Combining Forecasts (Paul Goodwin) 92
2.3 How to Forecast Data Containing Outliers (Eric Stellwagen) 95
2.4 Selecting Your Statistical Forecasting Level (Eric Stellwagen) 98
2.5 When Is a Flat-line Forecast Appropriate? (Eric Stellwagen) 102
2.6 Forecasting by Time Compression (Udo Sglavo) 104
2.7 Data Mining for Forecasting: An Introduction (Chip Wells and Tim Rey) 112
2.8 Process and Methods for Data Mining for Forecasting (Chip Wells and Tim Rey) 120
2.9 Worst-Case Scenarios in Forecasting: How Bad Can Things Get? (Roy Batchelor) 126
2.10 Good Patterns, Bad Patterns (Roy Batchelor) 135
Chapter 3  Forecasting Performance Evaluation and Reporting  143

3.1  Dos and Don’ts of Forecast Accuracy Measurement: A Tutorial (Len Tashman)  144
3.2  How to Track Forecast Accuracy to Guide Forecast Process Improvement (Jim Hoover)  160
3.3  A “Softer” Approach to the Measurement of Forecast Accuracy (John Boylan)  170
3.4  Measuring Forecast Accuracy (Rob Hyndman)  177
3.5  Should We Define Forecast Error as $e = F - A$ or $e = A - F$? (Kesten Green and Len Tashman)  184
3.6  Percentage Error: What Denominator? (Kesten Green and Len Tashman)  188
3.7  Percentage Errors Can Ruin Your Day (Stephan Kolassa and Roland Martin)  195
3.8  Another Look at Forecast-Accuracy Metrics for Intermittent Demand (Rob Hyndman)  204
3.9  Advantages of the MAD/Mean Ratio over the MAPE (Stephan Kolassa and Wolfgang Schütz)  211
3.10 Use Scaled Errors Instead of Percentage Errors in Forecast Evaluations (Lauge Valentin)  217
3.11 An Expanded Prediction-Realization Diagram for Assessing Forecast Errors (Roy Pearson)  228
3.12 Forecast Error Measures: Critical Review and Practical Recommendations (Andrey Davydenko and Robert Fildes)  238
3.13 Measuring the Quality of Intermittent Demand Forecasts: It’s Worse than We’ve Thought! (Steve Morlidge)  250
3.14 Managing Forecasts by Exception (Eric Stellwagen)  259
3.15 Using Process Behavior Charts to Improve Forecasting and Decision-Making (Martin Joseph and Alec Finney)  262
3.16 Can Your Forecast Beat the Naïve Forecast? (Shaun Snapp)  276

Chapter 4  Process and Politics of Business Forecasting  281

4.1  FVA: A Reality Check on Forecasting Practices (Michael Gilliland)  282
4.2  Where Should the Forecasting Function Reside (Larry Lapide)  288
4.3  Setting Performance Objectives (Michael Gilliland)  294
4.4  Using Relative Error Metrics to Improve Forecast Quality in the Supply Chain (Steve Morlidge)  297
4.5  Why Should I Trust Your Forecasts? (M. Sinan Gönül, Dilek Önkal, and Paul Goodwin)  309
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Author</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.6</td>
<td>High on Complexity, Low on Evidence: Are Advanced Forecasting Methods Always as Good as They Seem? (Paul Goodwin)</td>
<td></td>
<td>315</td>
</tr>
<tr>
<td>4.7</td>
<td>Should the Forecasting Process Eliminate Face-to-Face Meetings? (J. Scott Armstrong)</td>
<td></td>
<td>319</td>
</tr>
<tr>
<td>4.8</td>
<td>The Impact of Sales Forecast Game Playing on Supply Chains (John Mello)</td>
<td></td>
<td>327</td>
</tr>
<tr>
<td>4.9</td>
<td>Role of the Sales Force in Forecasting (Michael Gilliland)</td>
<td></td>
<td>340</td>
</tr>
<tr>
<td>4.10</td>
<td>Good and Bad Judgment in Forecasting: Lessons from Four Companies (Robert Fildes and Paul Goodwin)</td>
<td></td>
<td>349</td>
</tr>
<tr>
<td>4.11</td>
<td>Worst Practices in New Product Forecasting (Michael Gilliland)</td>
<td></td>
<td>358</td>
</tr>
<tr>
<td>4.12</td>
<td>Sales and Operations Planning in the Retail Industry (Jack Harwell)</td>
<td></td>
<td>363</td>
</tr>
</tbody>
</table>

**About the Editors** 381

**Index** 383