Principles of Forecasting: A Handbook for Researchers and Practitioners, J. Scott Armstrong (Ed.), (2001), Boston: Kluwer Academic Publishers, 849 pages.

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It has been a while since a handbook has appeared in the forecasting literature. This one is a pleasant departure from the traditional format. Armstrong is a believer in process, and in the development of this handbook, he used a first-rate one (p. 6). The authors submitted outlines. Armstrong provided some comments and returned them to the authors. The initial submissions were reviewed, and the reviewers usually requested extensive revisions. The revised papers were then reviewed by a large group of researchers. The end result is that the quality of the papers is quite good.

Armstrong has a clear, single, and unique objective in mind. It is the integration of the knowledge about forecasting using, as the medium, a set of principles. The book has 20 chapters, which I have grouped into five sections:

(1) Forecasting methods (Chapters 2-11),
(2) Forecasting tasks (Chapters 12-17) (selecting methods, combining methods, evaluating methods, assessing uncertainty, gaining acceptance; monitoring forecasts),
(3) Application of principles (Chapter -18),
(4) Diffusion of principles (Chapter 19),
(5) Summary (Chapter 20).

This could be considered a handbook about best practices (rather than principles – defined in *Webster's Collegiate Dictionary* as a comprehensive and fundamental law, doctrine, or assumption) that have surfaced in the practice and research about forecasting. To call them principles elevates them to the category of laws (Whybark and Flores 1985) and that is perhaps a bit much. On the other hand, I do not agree with the notion in the handbook that the forecasting principles should perhaps best be regarded as general recommendations (p. 76).

Chapters 2 through 11 describe forecasting methods. The section is well structured by means of a methodological tree (p. 9). It provides an excellent framework for presenting the forecasting methods and is used throughout the section.

This section contains a group of well-developed judgmental methods based on a good cross-section of the literature. The description of improving reliability is excellent. Chapter 3 on intentions is not as strong because of the topic. As is stated, many issues remain: for example, how best to measure intentions and under what conditions intentions forecasts are more or less accurate than extrapolations forecasts.

The chapters dealing with quantitative method are among the strongest – Extrapolation (Chapter 8), Rule Based Forecasting (Chapter 9), and Economic Methods (Chapter 11). The first two are the forte of Armstrong and some of his closest collaborators. The section on extrapolation of time series and cross-sectional data (p. 217) includes excellent suggestions, especially in the domain knowledge area, use of cycles (not), and conditions favoring extrapolation methods.

The second section is also robust. The chapters that deal with selecting forecast methods (12), combining methods (13), and evaluating methods (14) are well developed and integrated with the rest of the handbook. In particular, the forecast selection tree on page 376 is informative and useful. Evaluating forecasting methods (14) is a strong chapter as suggested by the number of principles listed (p. 465).

The section on applying principles (18) includes four examples that fully illustrate the utilization of the principles.

The next-to-last section concerns the diffusion of principles (199) through books and software. The question left unanswered is why some books have not incorporated the many principles that should have made it to hard copy. The designers of the software packages do a much better job in incorporating the principles.

The last section (20) is a tour de force. It provides a complete set of the principles. A forecaster (practitioner or academic) can use the principles that apply to his or her circumstances. The principles can provide a process path to elaborating excellent forecasts. If you follow them, will you have guaranteed better accuracy? I guess that nobody can provide a warranty, but the probability of accuracy will be improved.

In summary, the handbook contains a set of principles that will help the academic and the practitioner. You do not have to agree with all of the principles. A few may contain inconsistencies. Nonetheless, the output is good and noteworthy.

As to my Christmas wish list, I would have liked some explanation as to why practitioners are not applying the principles. That may come out of future research work.

Reference

Whybark, D. Clay and Benito B. Flores (1985), "Forecasting 'laws' for management," Business Horizons 28 (4) 48-53.