Books

Software Metrics, R. B. Grady and D. L. Caswell, Prentice-Hall, Inc., Englewood Cliffs, NJ, 1987. 288 pp. (ISBN 0-13-821844-7).

A better title for this book might be "Everything You Will Ever Need to Know About Software Metrics," although the authors would disclaim it. They are the first to acknowledge that software metrics is a rapidly changing and maturing field and that advocating provision for change is a necessary component of any software metric program. And they're right. However, the book does contain a wealth of information—and even more extensive references and bibliography—that should prepare the reader to address almost any current software metric issue from theory to practice that one might encounter in software quality and development productivity.

Therefore, don't let the subtitle of the book, "Establishing a Company-Wide Program," influence you not to read it. Although the story of Hewlett Packard's software metric program is the platform used by the authors to address software metrics, this history is so complete and detailed that it usefully summarizes general information from many other sources and unifies it into a coherent whole. It lets the reader benefit from HP's experience: reporting what they did and why, what worked and what didn't, and what they would do differently in the future or recommend to another company.

The authors confront head-on some complex and sometimes controversial problems like managing change and overcoming programmer resistance to being measured, and they share their specific and proven tactics. The authors recognize the weakness of some conventional metrics such as lines of code, but they explain the continued usefulness of these metrics when they are balanced with additional considerations such as complexity, language, and quantity of reused code. The benefits of software metrics are well elucidated and backed up with many success stories within HP to help the reader convince his associates.

Perhaps most useful of all is the day-to-day practical advice, including not only specifics of the metrics themselves (what data to collect; when, how, and what analyses to use to answer what questions for what level of management) but also the selling software metrics within the company. This is complemented by a rich set of examples: actual forms used by HP, sample data, analyses through which to put the data to gain various insights into productivity, quality, and complexity, and even slides used in the sales presentations. Many of the forms are scattered throughout the text to clarify points as they are made, but there is also an entire appendix devoted to HP's forms and their evolution over time.

The only shortcoming I could identify is the lack of IBM references, particularly in discussions of available tools. This is not much of a deficiency, however, compared to the many other ways the book can help you.

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