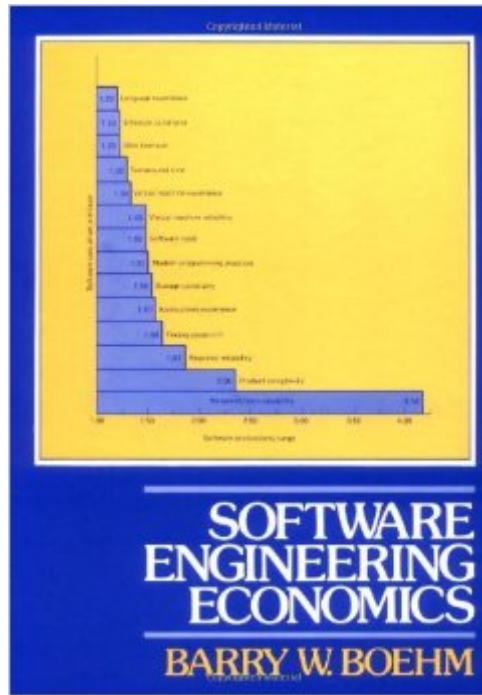# Software Engineering Economics

Synopsis

Software Engineering Economics is an invaluable guide to determining software costs, applying the fundamental concepts of microeconomics to software engineering, and utilizing economic analysis in software engineering decision making.

Book Information

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Customer Reviews

"Software Engineering Economics" is *the* book to be considered for anybody wishing to seriously enter the world of software cost estimation - only if it were because of the extremely great influence this book has had on this very peculiar aspect of software engineering. In this aspect, Barry Boehm is undoubtly the master.HOWEVER, it must be kept in mind that the book itself is somewhat outdated - COCOMO 81, as defined by Barry Boehm, has been overtaken by new technologies and in particular by the surge in PCs & the Internet. The basic model is still valid - I still use it myself - provided you are aware what the background in computing was when it was written, and you carefully assign the adjustment factors.Barry Boehm himself recognizes that COCOMO 81 is no longer valid - hence his collaboration with COCOMO II, which has addressed many of the problems that affected the old COCOMO 81 (e.g., it was mainly thought for development of software on expensive mainframes, and development tools have greatly evolved since that time). Still, I insist, if you are careful when making your estimations, the model and the techniques presented in this book are very useful and could be applied even on more modern projects.My second HOWEVER is

related to use the model presented in this book for Software Maintenance purposes. Though the book has a chapter on this issue, by opinion is a radical NO-No on this particular issue. COCOMO 81 (as presented in this book) and COCOMO II are adequate for software development purposes. I totally disagree that they are adequate for software Maintenance purposes (though COCOMO II is at least not so very bad).

A classic reference on estimating the cost of software projects, economic analysis techniques, and applying economic principals to upper-level management of software projects. The intimidating appearance of the text on initial inspection is overcome by the author's excellent organization of the content into small chapters and his lucid writing style. The definition of a software cost model called the constructive cost model (COCOMO) is a major centerpiece. Another centerpiece is the chapters on cost-effectiveness analysis, multiple goal decision analysis, dealing with uncertainties and the value of information, software project planning and control, and improving software productivity. Alternatives to cost models such as experts, analogy, Parkinson, price-to-win, top-down, and bottom-up are discussed in Chapter 22. Uses several case studies for example a transaction processing system. Contains an excellent set of questions and exercises at the end of each chapter.The COCOMO model is calibrated by industry data and expert opinion. Given module size estimates in lines of code as input the COCOMO model will predict effort and schedule in man-months. The COCOMO predictions cover the plans, product design, programming, and integration & test portions of the life cycle. The validity of the model is illustrated by charting actual vs. COCOMO prediction and the detailed analysis of the COCOMO cost driver attributes in Chapters 24-26. Product attributes are required software reliability (RELY), data base size (DATA), and product complexity (CPLX). Computer attributes are execution time constraint (TIME), main storage constraint (STOR), virtual machine volatility (VIRT), and computer turnaround time (TURN).

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