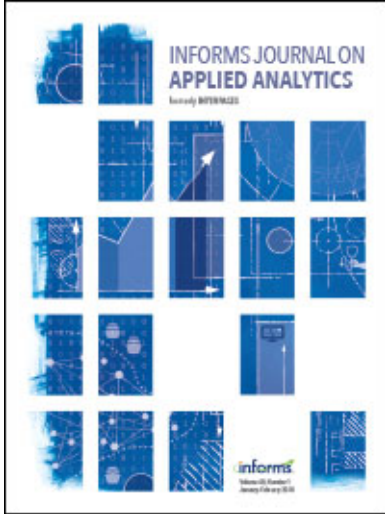




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Book Reviews

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$\beta \sum \Gamma \alpha \times \approx + * \div \neg \beta \subset \mu = \iota \rho \setminus + \sigma \alpha \geq x \dots \mu \omega \epsilon ; \& \mu ? \lambda \gamma \epsilon < \mu \Sigma \cap \zeta \pi \wedge \rho$
 $\beta \sum \Gamma \alpha \times \approx + * \div \neg \beta \subset \mu = \iota \rho \setminus + \sigma \alpha \geq x \dots \mu \omega \epsilon ; \& \mu ? \lambda \gamma \epsilon < \mu \Sigma \cap \zeta \pi \wedge \rho$

The range of books reviewed is wide, covering theory and applications in operations research, statistics, econometrics, mathematics, computers, and information systems. In addition, we include books in other fields that emphasize technical applications. We list the books and proceedings received; not all books received can be reviewed because space and time are limited. Those who would like to review books are urged to send the Editor their names, addresses, and specific areas of expertise. The Editor commissions all reviews and does not accept unsolicited book reviews. Readers are encouraged to suggest books that might be reviewed or to ask publishers to send copies of such books to the Editor.

COUGER, J. DANIEL; COLTER, MEL A.; and KNAPP, ROBERT W. 1982, *Advanced System Development/Feasibility Techniques*, John Wiley and Sons, New York, 560 pp., \$29.95.

This book consists of surveys and landmark papers describing the development and design techniques of information systems. The surveys are written by the authors of the book, and the papers are mostly reprints of published papers by contributors other than the authors.

The book is divided into six sections. The first five cover five generations of techniques, with a time sequence roughly comparable to five generations of computer hardware (the fifth generation, in both cases, being an extrapolation into the

future). The last section is devoted to cost/benefit analysis techniques.

In approximately 50 pages, three survey papers span the first three generations. Perhaps one reason for such brevity could be that the predecessor of this book [Couger and Knapp (eds.) 1974] covers the first three generations rather extensively.

The bulk of the book (350 pages) is devoted to the fourth generation which, in addition to an introduction and an overview, contains fourteen informative and landmark papers published during the last eight years. The overview subsection provides an excellent review of the structured methodologies, placing the papers in perspective. The papers which follow

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introduce the reader to the latest methodologies in different phases of system life cycle. The sequence of papers is well-chosen and gives the book continuity. For example, a paper on requirement engineering methodology (pp. 347-364) refers to and builds upon an example given in an earlier paper on structured design (pp. 164-185). There are, also, instances in which a paper picks up where the previous paper leaves off; for example, two papers on PSL/PSA (a computer aided technique for structured documentation and analysis, pp. 315-329 and pp. 330-346).

However, the degree of technical detail in papers varies. For instance, business systems planning (pp. 236-314) is discussed in detail, while Plexsys (a system development system, pp. 399-423) receives only a general coverage. On the other hand, the book is consistent in the sense that whenever a computer-aided technique is described, its overall approach, basic components and output samples are presented and references to detailed documents are given. This provides the book with a breadth that otherwise would not be feasible.

The fifth generation section, owing partly to its futuristic nature, is short (20 pages). It consists of one survey and one paper. Figure 1 (pp. 430-431) in the survey presents a comprehensive view of the evolution toward an integrated set of system development techniques.

The last section, cost/benefit analysis, is relatively and unduly brief (50 pages). While the concepts, especially in their refreshing emphasis on benefits (pp. 489-

499), are well presented, there could be a more extensive coverage of techniques.

For classroom discussion, there is a set of reading questions at the end of each survey and paper. Also, there is an instructor's manual available, containing answers to questions, and suggestions for teaching approaches. The book is appropriate for survey courses and professional reading. As a textbook for system analysis and design courses, it should be supplemented by additional materials containing detailed expository examples and applications.

A final note is in order. In reading the book, if you wonder where the references to figure 4 on pages 10-11 are, don't despair, you'll find them on pages 429-436. Perhaps the authors mean to test your perseverance or perhaps the figure and its references lost each other when they were brought over from the predecessor book and updated.

The book, on the whole, is valuable both as a reference and as a teaching tool.

Reference

Couger, J. D. and Knapp, R. (eds.) 1974, *Systems Analysis Techniques*, John Wiley and Sons, New York.

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SMITH, AUGUST W. 1982, *Management Systems: Analysis and Applications*, The Dryden Press, New York, 429 pp., \$28.95.

This book appears to be intended for a multi-disciplinary coverage of concepts in system analysis. It discusses topics in areas such as management and organiza-

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tion, management sciences, statistics, management information systems (MIS), decision support systems (DSS), planning, project management, control and cybernetics, and cost/benefit analysis.

The book is divided into five parts and 15 chapters. The first part, containing four chapters, defines system and modeling concepts. Part two (two chapters) addresses managerial and organizational topics. In part three (three chapters), MIS and DSS are discussed. Part four (three chapters) contains planning, forecasting, and cybernetics. Part five (three chapters) covers project management, cost/benefit analysis, and evaluation. At the end of each chapter review questions and problem sets are given. Furthermore, there are 19 cases at the end of the book itself. All, except three, are written by the author of the book.

The book's multi-disciplinary approach is innovative and long overdue. As the book's table of contents indicates, the task is a formidable one which has, unfortunately, remained unfulfilled.

To begin with, there is a vast number of topics. In order to incorporate so many subjects into one book, it would either be necessary to cover each in an extremely brief fashion or to deal extensively only with a selected set of topics within one well-defined framework. The author has chosen the first alternative; therefore, discussions of most concepts do not extend beyond a brief and abstract definition. The definition of documentation constitutes a case in point:

Documentation: How should logic, intent, details, and results be reported? Documentation should supply all pertinent information — who, when, why, how, and where [p. 145].

Three more sentences regarding the importance of documentation follow, and the subject is closed.

Similarly, simulation, econometrics, seasonal analysis, regression analysis — to name but a few other topics — are defined and summarily dismissed, each in less than one page.

More serious is the book's loose structure. In the preface, Smith states:

This book has been designed to allow instructors maximum flexibility in planning and use. Since each part is largely independent, an instructor can resequence the presentation of information to emphasize either an organizational or an operational approach, or to focus on general management, project management, or system analysis.

Indeed, parts, sections, and subsections are independent from one another, with the result that the book lacks structure. Except for the last part (Chapters 13, 14, and 15), the definitions are listed, one after another, with a minimum number of examples and without a logical framework to unify them. While this encyclopedic approach might be useful in a reference for professionals, it is ineffective for a textbook or for reading material for students.

The density, variety and multiplicity of topics may have contributed to the occasional inaccuracies present in discussions of techniques. For example, on the topic of regression, we find:

Using the least-squares regression equation, it is possible to find the best fit, or single line above and below which the fewest summed deviations fall [p. 199].

The correct definition is that in the least-squared method, we *minimize* the sum of *squared* deviations from the line. On the same page, regression coefficients are

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called correlation coefficients. Confronted with such errors, one cannot help but observe that some of the technical discussions in the book leave much to be desired.

To evaluate the book as a whole, I will borrow the author's own words. According to Smith, "A system is simply a set of entities that interact" [p. 3]." This book about systems is a set of definitions and concepts that do not interact. Since, in his preface, the author mentions future editions, let us hope that he will come to practice the systems thinking he rightly preaches and will realize his innovative, multi-disciplinary ideal in future editions. Until then, in keeping with the dictum Smith quotes on page 245: "As the saying goes, time is money . . .," don't spend your money on this edition.

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CRIMP, MARGARET 1982, *The Marketing Research Process*, Prentice-Hall International, London, 256 pp., \$12.95.

Most books on the process of marketing research are organized around the steps involved in conducting marketing research. While this approach is most helpful to researchers, it has a tendency to obscure the connection between marketing and research. Crimp clarifies this connection by organizing her discussions of marketing research around particular marketing issues and decisions. Indeed, her "process" is largely the sequence of marketing decisions typical of developing, introducing, and marketing a new consumer product or service.

Crimp mentions in the preface that her general theme is that the need of marketers for research is continuous and that the process is circular. She organizes the "marketing research process" into four stages. The first stage (Chapters 2 through 6) involves gathering information on market opportunities. Exploratory research is conducted in order to formulate hypotheses about the population of interest, followed by survey research to test these hypotheses. Segmentation possibilities are also explored in this stage. Marketing research topics covered during the first stage include data collection alternatives, sampling techniques, sampling statistics, questionnaire design, scaling, and multivariate data analysis. Since these topics and the concept of market segmentation are covered in roughly 100 pages, the breadth and depth of discussion is obviously abbreviated.

Stage two involves developing a product and marketing program that appeals to the target market identified in the first stage. Chapter seven begins with a discussion of experimentation. This discussion, like many others in this book, is based on a diagram from Kotler's basic marketing management text. Sources with greater depth should probably have been used, considering the brevity of individual topic discussion in this book. The remainder of Chapter 7 is devoted to product packaging, brand name and price pre-testing techniques. The major portion of this section (Chapters 8 and 9) is devoted to advertising message testing and media selection information, omitting entirely any discussion of channels and personal selling research.

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Stages three and four are research on current performance predicting future performance, respectively, thereby substantiating the "continuous" and "circular" nature of marketing research. Because both stages are covered in the final chapter of the book, however, the impression of marketing research being "continuous" and "circular" is not very strong.

Throughout this book one might wish for a more comprehensive development of the issues raised. This is particularly true with respect to statistical analysis techniques. Factor analysis, for example, is described as a technique that "examines correlations between variables across respondents" (p. 105). The author's discussion of the other multivariate data analysis techniques is similarly brief, without a hint about their assumptions and limitations.

What audience will find this book most interesting and helpful? It is clearly not intended for academicians interested in research. While students will have no problem with the book's level of technical discussion, its presentation of how to conduct marketing research is probably too limited to meet the requirements of most instructors. Also the organization of this book probably precludes its use as a supplementary text because of difficulties in integrating it with most marketing research texts. The book's organization probably fits the needs of small or new firms introducing a new product, although the emphasis on British examples and references may prove distracting to domestic firms. Even for this audience, because of its lack of depth, the book only

informs practitioners of what an outside marketing research or consulting firm could do for them.

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JOHNSTON, WESLEY J. 1981, *Patterns in Industrial Buying Behavior*, Praeger Scientific, New York, 197 pp., \$26.95.

This book reports on a study involving 31 firms and 62 industrial purchase situations. The purpose of the research was to develop and test an "improved" conceptualization of industrial buying behavior which focuses on the transactional and interactive nature of the industrial purchasing process. More specifically, the study attempts to determine the effect of organizational-structural variables (for example, firm size, formalization, centralization of authority, and complexity) and product-purchase attributes (for example, importance, novelty, and complexity of the purchase decision) upon participation in decisions to purchase capital goods and industrial services.

The book is organized according to standard academic journal format. The first half is devoted to developing arguments for the author's model of communication networks and influence patterns in industrial purchasing. In Chapter 1, the author discusses the purpose of the study, as well as the nature of industrial buying behavior and who is likely to be involved in the process. Chapter 2 sum-

marizes earlier stimulus-response type approaches to understanding industrial purchasing. Chapter 3 examines the underlying assumptions of these earlier works and presents a reconceptualization of industrial purchasing. It focuses on the dyadic interaction that takes place in industrial purchasing between individuals within and outside the purchasing organization. This interaction is measured according to (1) vertical-hierarchy involvement; (2) horizontal-hierarchy involvement; (3) extension (that is, the total number of people involved); and (4) connectedness (that is, the ratio of actual to potential number of interactions).

The second half of the book focuses on the study itself. The methodology for the study is discussed in Chapter 4, while Chapter 5 presents the results. Included in the results is a "task-involvement matrix" which depicts the extent to which the various functional areas in the organization become involved in the different tasks of the buying process.

In the final chapter of the book, the major implications of the study are listed along with suggestions for future research. One important conclusion is that earlier models depicting the industrial purchasing process as a straightforward chronological flow of identifiable steps or phases are too simplistic and that the actual process is more iterative with no clear identifiable sequence. The author also concludes that finding the key buying influencer in a purchasing decision may be impossible because the actual decision process is so complex.

As mentioned in the foreword of the book, this work is one of the earliest and

most extensive attempts to view industrial purchasing as a social phenomenon. As such, this book is of primary interest to academicians doing research in the areas of industrial purchasing, industrial marketing, selling, and sales management. It presents an important framework and point of departure for further studies on both buying center composition and the extent of influence exerted by participants in the process.

There are several drawbacks to the book. First, it does not fulfill all the promises made in the introduction. The author explicitly states that the study will provide an empirical answer to the question "What is the degree of influence of each participant in the purchasing process?" (p. 3). Actually, the study measures participation in the purchasing decision, not influence. Operationally, past researchers have measured participation and influence through different sets of questions. There is little justification for saying that this study addresses purchasing influence.

Second, while the exhaustive "snowball" data collection technique has not been widely used in marketing studies, this is not, as suggested by the author, the first time it has been used to address the issue of buying center participation. At least three earlier studies of buying center composition [Cronhaug 1976; Ozanne and Churchill 1971; and Patchen 1974] have used the technique [Moriarty and Bateson 1982], so its use is not entirely novel.

Finally, although the literature review, model reconceptualization, and findings will be of interest to academicians, these

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topics have been summarized in a much shorter article by Johnston and Bonoma [1981].

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