Recently published books and new periodicals may be submitted for review to the Book Reviews Editor:

Dr. Francis P. Mathur
Professor of Computer Science
Wayne State University
646 Mackenzie Hall
Detroit, MI 48202
Telephone: (313) 577-2477

(Note: publications reviewed in this section are not available from the IEEE Computer Society. Please order directly from publisher.)

B77-6 Hospital Computer Systems and Procedures: Volume I, Accounting Systems—Raymond D. Garrett (New York: Petrocelli/Charter, 1976, 326 pp., $14.95).

This book is the first volume of a two-volume series on hospital computer systems. The present volume is devoted to hospital accounting systems; the second will discuss clinical laboratory and electro-cardiography processing.

The first of ten chapters provides an introductory view of the hospital as a business and accounting problem. Chapter 2 discusses the accounting system of the hypothetical hospital, which is studied in depth via the "continuous case study" approach throughout the book. Chapter 3 proposes a "Five Year Plan" to automate the hypothetical hospital's manual system. The next three chapters are devoted to an in-depth analysis of patient accounting: first the system, then the forms, and then the implementation scheme. The seventh chapter is devoted to admissions. Chapter 8 discusses payroll. Chapter 9 supplies accounting, and Chapter 10, a general ledger.

Although there is much useful information to be found in this work, the author's attempt to make it read like a novel by employing the "continuous case study" method makes it most difficult to use as a text or a reference. As a novel, it lacks love interest, and its literary level barely rises above "Sesame Street" (for example, "Ed notes that it is almost six o'clock" or "Tom and Ed meet over breakfast.").

Another problem is the excessive use of uninformative diagrams, such as copies of coding forms and file specification sheets; there are 160 pages of diagrams out of only 323 pages of text.

If one is willing to wade through the continuous case study to find the information one is looking for, the book could be useful as a reference; however, it is not well suited as a text in hospital computing systems.

David J. Solonche
University of Connecticut
Health Center

B77-7 Economics of Informatics—A. B. Frieling, ed. (New York: American Elsevier Publishing Company, 1975, 469 pp. $41.75).

This book represents the proceedings of the IBI-ICC International Symposium held in Mainz, FRG, September 16-20, 1974. Included are some 52 papers plus the opening and closing addresses to the conference.

The introductory remarks by H. R. Balls, presented to set the framework for the remainder of the conference, claim that the conference is "devoted to a general overview of three main themes:

1. The economic considerations underlying national planning for informatics;
2. The criteria for determining or measuring the effectiveness of information systems; and
3. The criteria for determining or measuring the efficiency of such systems."

Sounds good so far, particularly in the light of some definitions:

Informatics—the science of the systematic and effective treatment, especially by automatic machines, of information . . . .

Effectiveness—the degree of assistance which decision-makers and users receive from informatics to enable them to perform their functions in an optimal way.

Efficiency—the least expensive means used to perform the given task assigned to the system.

Unfortunately, the conference does not build on its framework. Twenty-five of the 52 papers presented are in the "national planning" area and consist primarily of arguments or pronouncements in favor of centralized governmental control of computing. For example, "Algeria has adopted socialist planning which supposes the animation and the continuous control of all the sectors of activity. Data processing must play a dual role: first of all [it is] a privileged tool servicing the planning bodies . . . ." And: "Economy in the use of computers necessitates central control."4

Although I can recognize some personal antagonism to the philosophy portrayed, as well as the fact that others, particularly in Europe, may agreee with it, I don’t need to hear about it more than 20 times. Even then I would find it more convincing if the idea were presented by groups other than those responsible for the central control. The entire effect is that of preaching to the choir.

In the other areas, effectiveness and efficiency, some good papers are included, notably by Hawgood, Tully, Verhelst, and Willoughby. Hawgood presents an approach to the definition, measurement, and forecasting of benefits to five groups—personal
subjects, independent users, employees, financial beneficiaries, and decision-makers. The tradeoffs among benefits to these different groups are pointed out and explored to some extent.

Tully presents an amusing and literate dissertation on standardization. He argues against consensus standards (standardizing on what exists, after the fact) and in favor of "vanguard" (forward-looking standards).

Verhelst describes financial measurement approaches: statistical decision theory and a modeling approach which he calls systems dynamics. He follows this with the introduction of another modeling technique called the control process approach. The descriptions are very brief but provide a concise introduction to the three techniques.

Willoughby discusses computer services pricing. The primary utility of this paper is its bibliography, which is extensive for a paper of this size. The paper itself presents brief descriptions of various pricing techniques.

In summary, this book might be of some reference value in the library of a government agency interested in the national computer policies of other countries. However, the presence of a few interesting (but certainly not earth-shaking) papers is not enough to recommend anyone's personal acquisition of *The Economics of Informatics*.

M. Leonard Birns
Wright—Patterson AFB

1. "Towards the Quantitative Measurement of Development in Informatics," R. E. Kalman, UNESCO.
2. From the notifying brochure.
3. "The Algerian Computerization Plan."
4. Estimating the costs and Benefits and Monitoring the Effectiveness of Large Government Installations. I. G. Head, Central Computer Agency, U.K.
5. Quineval-like Quantification of Computer Benefits," J. Haywood, University of Durham, U.K.
6. "Standards: Lamp-posts and Strange Devices," C. Tully, York University, U.K.
7. "On Possible Approaches and Techniques for Determining Financial Benefits of Organizational Information," M. Verhelst, University of Leuven, Belgium.
8. "Pricing of Computer Services," T.C. Willoughby, SUNY at Binghamton, U.S.

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**Selections from IEEE Press**

**Magnetic Bubble Technology: Integrated-Circuit Magnetics for Digital Storage and Processing.** An IEEE Press Book edited by Hau Chang, IBM, 1975—712 pp. Text contains 46 reprinted papers, background information, devices, applications, physics, materials, perspectives, and a list of patents. Format includes preface, bibliography, and subject and author indexes. Non-members—$26.95 Members—$20.20 Paperbound (members only)—$13.45

**Computer Communications.** An IEEE Press Book edited by Paul E. Green, Jr., IBM, and Robert W. Lucky, Bell Laboratories, 1975—624 pp. Text contains illustrated selected reprints on computer communication environments, system elements, digital transmission media, and total systems. Format includes introduction and author and subject indexes. 60 reprinted papers are presented. Non-members—$19.95 Members—$14.95 Paperbound (members only)—$9.95

**Literature in Digital Signal Processing: Author and Permutated Title Index (revised and expanded edition).** An IEEE Press Book edited by Howard D. Helms, James F. Kaiser, and Lawrence R. Rabiner, Bell Laboratories, 1975—216 pp. Text includes listing of 1,872 books, conference records, reports, theses, and papers. Format includes introduction, permutated title index, and author index. Non-members—$13.95 Members—$10.45 Paperbound (members only)—$6.95

**Computer Networking.** An IEEE Press Book edited by Robert P. Blanc and Ira W. Cotton, 1976—376 pp. Topics: an introduction to computer networking, technology, design, examples, management, and future trends. Book contains 46 reprinted papers with transitional and background material provided. Non-members—$17.96 Members—$13.45 Paperbound (members only)—$8.95

**Selected Papers in Digital Signal Processing.** II. An IEEE Press Book edited by the Digital Signal Processing Committee, IEEE Acoustics, Speech, and Signal Processing Society, 1976—592 pp. Selected reprints covering one-dimensional digital filtering, two-dimensional signal processing, finite wordlength effects, network structures, hardware, and terminology. Includes 63 reprinted papers. Non-members—$17.95 Members—$13.45 Paperbound (members only)—$8.95

**Communications Channels: Characterization and Behavior.** An IEEE Press Book edited by Bernard Goldberg, U.S. Army Electronics Command, 1976—776 pp. Covered are the time-variant transfer-function properties, analytic modeling, simulation, error-rate behavior, and actual system performance in practical communication channels. Includes 65 reprinted papers. Non-members—$22.95 Members—$17.20 Paperbound (members only)—$11.45

**Large-Scale Networks: Theory and Design,** An IEEE Press Book edited by Francis T. Boesch, Bell Laboratories, 1976—496 pp. Topics: an introduction to the theory of large-scale networks, optimum path problems, basic theory, and applications. Includes 31 reprinted papers. Non-members—$19.95 Members—$14.95 Paperbound (members only)—$9.95

**Minicomputers: Hardware, Software, and Applications,** An IEEE Press Book edited by James D. Schoeffler, Case Western Reserve University, and Ronald Temple, General Electric Company, 1972—376 pp. Topics: minicomputer hardware and software, minicomputer input and output devices important in applications, data acquisition applications, and processing control applications. Non-members—$14.55 Members—$10.90 Paperbound (members only)—$7.25

**Semiconductor Memories,** An IEEE Press Book edited by David A. Hodges, University of California, 1976—321 pp. Reprinted articles in this volume give the reader an appreciation of the characteristics, limitations, and trends affecting semiconductor memories. Topics: introduction to semiconductor memories, bipolar transistor memories, MOS transistor memories, interconnections, packaging and economics, reliability, maintainability, and testing system examples, serial memories, and content-addressable memories. Non-members—$13.55 Members—$10.15 Paperbound (members only)—$6.75

**A Practical Guide to Minicomputer Applications,** An IEEE Press Book edited by Fred F. Coury, Hewlett-Packard Co., 1972—224 pp. Contains reprinted papers from a number of diverse sources. Topics: introduction to minicomputers, peripheral and software considerations, selecting a minicomputer, and general and specific applications. Non-members—$11.55 Members—$8.65 Paperbound (members only)—$5.75

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Microprocessor Design—325 pp.
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1976 Publications

Trends and Applications 1976: Computer Networks, November 17, 1976—186 pp.
Proceedings topics include experiences in network design and implementation; protocols; flow control/routing; services and user considerations; hosts vs. the communication subnetworks; and modularity in design. Held in Gaithersburg, Maryland, this one day symposium is sponsored by the IEEE Computer Society's Technical Committee on Computer Communications and the National Bureau of Standards.
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Proceedings of the 1976 Symposium on Computer-Aided Diagnosis of Medical Images, November 11, 1976—100 pp.
This one-day symposium, held in conjunction with the Third International Joint Conference on Pattern Recognition, featured 16 papers on such topics as medical imaging from both the engineer’s and the physician’s viewpoint, recognition of vessel shadows, quantitative diagnosis of early pulmonary edema, picture processing of echocardiographic data, dynamic boundary surface detection, interactive graphics for lung volume determination, image processing for computer tomography, and studies on the utility of brain scanning.
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The Proceedings of the AFIPS/FCC Planning Conference, November 8-9, 1976—100 pp.
Proceedings from conference provides technological information relevant to the initiation by the FCC of a second “computer inquiry” which will consider regulatory policy related to computer communications and the uses of computers in communications. Volume includes a review of state of art computer communications, current research topics, and contemporary user demands and uses commercial services and teleprocessing facilities.
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Proceedings of the 3rd International Joint Conference on Pattern Recognition, November 8-11, 1976—680 pp.
Contains over 150 papers on industrial applications, feature extractions and primitive selection, syntactic methods in pattern analysis, optical character recognition, learning algorithms and sample sizes, line drawing and waveform processing, interactive pattern analysis, statistical pattern recognition theory, perceptual modeling, clustering, linguistic applications and natural language processing, segmentation and shape encoding, medical image processing and pattern analysis, picture description and scene analysis, speech recognition, remote sensing, parallel processing and two-dimensional digital filtering, edge and object recognition, pattern recognition applications, image analysis and texture, and data base computer systems.
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Proceedings of the Second International Conference on Software Engineering, October 13-15, 1976—700 pp.
Topics covered in this proceedings include software requirements and specifications, program synthesis techniques, operating systems, education, performance evaluation, networks, design and development, programming languages, modeling, testing, and case studies.
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Proceedings of the 1976 International Conference on Parallel Processing, August 24-27, 1976—328 pp.
Proceedings cover every facet of parallel processing with contributions from more than 80 authors representing countries around the world. General session topics include image processing, operating systems, system architecture and organization, scheduling, system performance, reliability, applications, staran and related topics, performance, multiple-microprocessors, fundamental theory, and language issues.
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