

The Engineering Economist, 50: 5–15

Copyright © 2005 Institute of Industrial Engineers

ISSN: 0013-791X print / 1547-2701 online

DOI: 10.1080/00137910590916658



Taylor & Francis
Taylor & Francis Group

THE ENGINEERING ECONOMIST: AIMS AND SCOPE OF FOCUSED AREAS

The Engineering Economist is a refereed journal published jointly by the Engineering Economy Division of the American Society of Engineering Education (ASEE) and the Institute of Industrial Engineers (IIE). The journal publishes articles, case studies, surveys, book and software reviews, and readers' comments that represent current research, practice, and teaching involving problems of capital investment.

The journal seeks submissions in a number of areas, including, but not limited to, capital investment analysis, cost estimation and accounting, cost of capital, design economics, economic decision analysis, education, policy analysis (i.e., governmental), and research and development.

As noted in the editorial, we are celebrating the 50th volume of our journal and we are taking this opportunity to reinvigorate our purpose. This is to be facilitated with the designation of area editors assigned to specific submission focus areas. These areas are clearly defined below and the representative area editors are introduced. Their contact information is provided in case prospective authors have questions about potential submissions in prospective areas. However, all submissions should be sent to the editor-in-chief. The focus areas are listed alphabetically, followed by case study and book/software review submission guidelines. Following the definition of the areas are the new electronic submission guidelines for the journal.

CAPITAL INVESTMENT ANALYSIS

Capital investment analysis addresses how firms should evaluate and choose among possible investment alternatives. Problem areas include capacity expansion, equipment replacement, abandonment, and technology choice. Decision settings that explicitly consider risk, uncertainty, constraints (i.e., budgeting), and/or intangibles in analysis are highly encouraged. It is expected that the solution methodologies will range from operations research techniques (such as mathematical programming, stochastic processes, and simulation) to decision analysis and real options.

Area Editors:
 Philip C. Jones
 The University of Iowa
 Management Sciences
 S282 Pappajohn Building
 Iowa City, IA 52242-1000
 Phone: 319-335-3737
 E-mail: philip-c-jones@uiowa.edu

Philip Jones is the Clement T. and Sylvia H. Hanson Chair in Manufacturing Productivity in the Henry B. Tippie School of Management at the University of Iowa. He received his Ph.D. from the University of California, Berkeley, and also has degrees from Georgia Tech and Stanford. His interests include manufacturing productivity, logistics, capital equipment acquisition, and implementation. He has served as an area editor since 1995.

Sarah M Ryan
 Iowa State University
 Department of Industrial and Manufacturing Systems Engineering
 2019 Black Engineering Building
 Ames, IA 50011-2164
 Phone: 515-294-4347
 E-mail: smryan@iastate.edu

Sarah M. Ryan is Associate Professor of Industrial and Manufacturing Systems Engineering at Iowa State University, where she teaches and conducts research in applied stochastic models, dynamic optimization, and environmentally sustainable engineering.

COST ESTIMATION AND ACCOUNTING

Areas of cost accounting and cost estimating are traditionally separate. However, they are integrated as the collection of data (accounting) is generally regarded as an input to estimating. Papers are expected to make contributions to either field based on analytical or empirical results. For accounting, a particular area of emphasis is activity-based costing (ABC), both in the design and implementation of such systems. For estimating, problems include engineering design procedures that bear on product cost estimating, such as concurrent engineering, design for assembly and manufacturing, design for profit, target costing, configuration and specification management, labor and material design and cost analysis, and specific

techniques including learning, database techniques and software, outsourcing and supplier assessment, and bill of material/design collaboration.

Area Editors:

Heather Nachtmann
University of Arkansas
Department of Industrial Engineering
4207 Bell Engineering Center
Fayetteville, AR 72701
Phone: 479-575-5857
E-mail: hln@uark.edu

Heather Nachtmann is an Assistant Professor of Industrial Engineering at the University of Arkansas. She received her Ph.D. in industrial engineering from the University of Pittsburgh. Her research interests include activity-based costing, economic decision analysis, and engineering valuation. She is a co-recipient of the 2004 Eugene L. Grant award and is actively involved in the Engineering Economy Divisions of ASEE and IIE.

Phillip Ostwald
University of Colorado
6682 Whaley Drive
Boulder, CO 80303-4332
Phone: 303-494-3806
E-mail: Phillip.Ostwald@colorado.edu

Phillip F. Ostwald is Emeritus Professor of Mechanical Engineering at the University of Colorado Boulder. His areas of interest include manufacturing processes and cost analysis and estimating for engineering. He has authored over five textbooks and industrial reference books, along with numerous foreign translations. He has also been involved with commercial software development.

COST OF CAPITAL

Cost of capital deals with sources of funds, including loans, bonds, stocks, and derivative securities; their respective costs including tax effects, the proper mix of funds, and the relationship to a minimum attractive rate of return (MARR). A key issue is the relationship between capital structure and the costs of components. Dynamic behavior and uncertainty complicate the situation. The journal seeks papers that introduce new concepts and papers that validate existing issues. Papers should support critical assumptions

with empirical data or documented results by others. Papers should include the implications of their results for managers.

Area Editor:

Gunter Sharp

Georgia Institute of Technology

School of Industrial and Systems Engineering

765 Ferst Dr. NW

Atlanta, GA 30332-0205

Phone: 404-894-2341

E-mail: gsharp@isye.gatech.edu

Gunter Sharp is on the faculty of The School of Industrial and Systems Engineering, and The Logistics Institute, at the Georgia Institute of Technology, where he teaches and does research in the areas of economic decision analysis and warehousing logistics. He was an employee of consulting firms in Greece, Saudi Arabia, and the United States before starting his academic career. He has extensive national and international experience in the areas of economic feasibility studies and facilities planning. In 1990 he was awarded the "Joseph von Fraunhofer Honor Medal" in the category of "Foreign Scientist, 1990" at Dortmund, Germany. From 1979–1981, he served as manuscripts editor for *The Engineering Economist* and was responsible for all technical papers submitted. He is co-author of *Advanced Engineering Economics* and a co-developer of a web-based course in engineering economy.

DESIGN ECONOMICS

Design economics addresses aspects of economic evaluation related to the design of products or systems. This includes, but is not limited to, the economic evaluation of decisions affecting product design, selection among design alternatives, and multi-criteria decision-making in light of life cycle considerations (e.g., usability, aesthetics, manufacture, assembly, test, distribution, service, longevity, and retirement). Papers must demonstrate analytical or empirical results within an economic framework of analysis, with emphasis on how economics aides and/or significantly impacts the quality of design decisions and, ultimately, the success or failure of products and systems.

Area Editor:

Janis Terpenney

Virginia Polytechnic Institute and State University

Department of Engineering Education
332 Randolph Hall (0218)
Blacksburg, VA 24061
Phone: (540) 231-9538
E-mail: terpenny@vt.edu

Janis P. Terpenny is an Associate Professor of Engineering Education (with affiliated positions in industrial and systems engineering and mechanical engineering) at Virginia Polytechnic Institute and State University (Virginia Tech). Dr. Terpenny's research and teaching interests are at the intersection of engineering design and information technology with the primary goal to revolutionize how engineered products and systems are conceptualized and configured. Currently she is a co-director and Virginia Tech site director for the NSF Center for e-Design. Dr. Terpenny has prior industrial experience at General Electric (GE) where she completed a two-year corporate training program in information systems and received a management recognition award. She is a member of IIE, ASME, SWE, and ASEE, where she is currently the chair of the Engineering Economy Division.

ECONOMIC DECISION ANALYSIS

Problem areas include the design and evaluation of discounted cash flow techniques and measures of worth; decision criteria and their application in project selection, both constrained and unconstrained; value of complete and partial information; combining individual judgments into group decisions; multiple attribute methods for decision making; advances in the theory and practice of probability and utility assessment; behavioral and psychological issues in decision making as related to engineering economy; applications of economic decision analysis; methods for incorporating risk in decision making; and decision aids to support economic decision making.

Area Editor:
Jane M. Fraser
Colorado State University-Pueblo
Department of Engineering
2200 Bonforte Blvd.
Pueblo, CO 81001
Phone: 719-549-2036
E-mail: Jane.Fraser@colostate-pueblo.edu

Jane M. Fraser is Chair of the Department of Engineering at Colorado State University—Pueblo. Her areas of teaching and research are decision analysis, stochastic processes, and quality control. Professor Fraser was formerly on the faculty of Purdue University and Ohio State University, where she won the University-wide Alumni Award for Distinguished Teaching. She is active in the Engineering Economy Division, the Industrial Engineering Division, and the Rocky Mountain Section of the American Society for Engineering Education.

ENGINEERING ECONOMY EDUCATION

The journal invites articles that promote effective teaching of engineering economy. Of particular interest are articles on educational methods that have high impact and are readily adaptable by others. Topics of interest include, but are not limited to, innovative classroom activities and teaching methods for engineering economy courses, methods of integrating engineering economy principles into other courses throughout the curriculum, and content and desired outcomes of engineering economy courses. Articles should assume the reader is knowledgeable about engineering economy principles and focus on pedagogy. Educational methods should be presented with a clear description of their goals and a detailed assessment of their effectiveness.

Area Editor:
Kevin Dahm
Rowan University
College of Engineering
201 Mullica Hill Road
Glassboro, NJ 08028-1701
Phone: (856) 256-5318
E-mail: dahm@rowan.edu

Kevin Dahm is an associate professor of chemical engineering at Rowan University, where he teaches engineering design, engineering economics, thermodynamics, and chemical reaction engineering. He has published articles on engineering economics education, assessment techniques for engineering courses, and use of computing and simulation in engineering courses. He is the recipient of the 2002 PIC-III Best Paper Award and the 2003 Joseph J. Martin Award from ASEE.

PUBLIC POLICY ANALYSIS

Public policy analysis addresses how local, state, and federal programs, regulations, and economic incentives affect capital investment decisions and other technology decisions made by engineers and technology managers. This includes, but is not limited to, such topics as tax credits for R&D and capital spending, environmental economics, infrastructure investment, energy and transportation economics, and capital equipment depreciation policy. Additionally, this area considers analyses of investments made in the public sector, generally treated with benefit-cost analysis. Papers must demonstrate analytical or empirical results within an economic framework of analysis, with emphasis on how a particular public policy influences engineers and technology managers in making investment and/or design decisions. In this focus area, the journal seeks to provide practical feedback to policy makers on how particular public sector programs will influence the work of professional engineers and technology managers.

Area Editor:**Thomas O. Boucher****Rutgers University****Industrial and Systems Engineering****96 Frelinghuysen Road****Piscataway, NJ 08854****Phone: 732-445-3657****Fax: 732-445-5467****E-mail: toucher@rci.rutgers.edu**

Thomas O. Boucher is Professor of Industrial and Systems Engineering at Rutgers University, where he teaches and performs research in engineering and industrial economics, production control, automation sciences, and industrial information systems. He is the author of two books and numerous articles in these areas. He has been involved in the engineering economy community for over 25 years, during which he won the Eugene L. Grant award four times and was the 2002 recipient of the Wellington Award.

RESEARCH AND DEVELOPMENT

Problem areas include, but are not limited to, all economic aspects of research and development, most notably the valuation of new product development, patents, licenses, new technology, R&D budgeting, project selection, continuation and termination. Articles that deal with theoretical issues and applications in managing risk, uncertainty and valuation of operating

flexibility in the above problem areas at both the project and portfolio level are highly encouraged. Solution methodologies include real option analysis, decision theory, simulation, and mathematical programming.

Area Editor:
Hemantha Herath
 Brock University
 Department of Accounting
 Faculty of Business
 Brock University
 Taro Hall, 240
 500 Glendrige Avenue
 St. Catharines, Ontario L2S 3A1, Canada
 Phone: 905-688-5550 Ext. 3519
 E-mail: hemantha.herath@brocku.ca

Hemantha Herath is an Assistant Professor of Managerial Accounting in the Faculty of Business at Brock University. Previously, he was an assistant professor at University of Northern British Columbia and a consultant in the Oil and Gas Division of the World Bank. He is a recipient of a Fulbright Scholarship. He has published articles a variety of journals including *Advances in Investment and Portfolio Management*, *Advances in Management Accounting*, *The Engineering Economist*, *Managerial Finance Journal*, *Managerial Auditing Journal*, and *Review of Corporate Finance*. His research interests include real options, risk management, decision theory, and corporate governance. He received the 2001 Eugene L. Grant Award and is the past director of the Engineering Economy Division of IIE.

CASE STUDY ANALYSIS

Engineering economy advances through application as well as through research. This focus area will highlight exemplary analysis throughout the array of engineering economy focus areas and tools. Case studies are expected to demonstrate the application of new concepts or provide new insights about the use of engineering economy tools. Case studies that illustrate weaknesses in existing methodologies and concepts are also encouraged. Where possible, papers will present actual data and organizations. As needed, papers may protect proprietary information, but authors must substantiate that the needed alterations do not materially affect the conclusions of the case study. Note that, for consideration here, all cases must be based in reality. Fictional cases that are designed to illustrate

algorithms or analysis will be directed to the area editor of the appropriate analysis.

Area Editor:

Ted Eschenbach
TGE Consulting
4376 Rendezvous Circle
Anchorage, AK 99504
Phone: 907-333-7817
E-mail: ted1@alaska.net

Dr. Ted G. Eschenbach, P.E., is a consultant and an emeritus professor of engineering management. He received his Ph.D. degree in industrial engineering from Stanford University in 1975 and his M.C.E. degree from the University of Alaska, Anchorage, in 1999. He is the founding editor emeritus (through volume 14, issue 1) of the *Engineering Management Journal*. He is the author or co-author of six engineering economy texts. He is a fellow of ASEM, and he has served on its board of directors. He served for eight years on the editorial board of *The Engineering Economist*.

BOOK AND SOFTWARE REVIEWS

The book review and software editor solicits recently published books and recently developed software in the area of capital investment for independent review. Readership of the journal is composed of practicing engineers, engineering managers, financial managers, engineering educators, and researchers. These books and software should have appeal to one or more of these constituents.

Area Editor:

Kim Lascola Needy
University of Pittsburgh
Department of Industrial Engineering
1041 Benedum Hall
Pittsburgh, PA, 15261
Phone: 412-624-9838
E-mail: kneedy@engr.pitt.edu

Kim LaScola Needy is an Associate Professor of Industrial Engineering at the University of Pittsburgh. She received her B.S. and M.S. degrees in industrial engineering from the University of Pittsburgh, and her Ph.D. in industrial engineering from Wichita State University. Prior to her academic

appointment, Dr. Needy accumulated nine years of industrial experience while working at PPG Industries and The Boeing Company. Her research interests include activity-based costing, engineering economic analysis, engineering management, and integrated resource management. Dr. Needy is a member of ASEE, ASEM, APICS, IEEE, IIE, and SWE. She is a licensed P.E. in Kansas.

SUBMISSION PROCESS

In accordance with the changes in the editorial composition of the journal, we have initiated a new submission process. The process is available, and will be continually updated online, at <http://www.tandf.co.uk/journals/authors/uteeauth.asp>

The manuscript should be submitted via e-mail (as an attachment in PDF format) to:

Joseph C. Hartman, Editor
Industrial and Systems Engineering
Lehigh University
jch6@lehigh.edu

Specifically, the submission steps are as follows:

1. Write your paper according to the format guidelines below. To facilitate a double-blind review process, do not include author names on this document. Convert the document to PDF if possible. Be sure that no author information is in the file (including in electronic form). *Note: this is the responsibility of the author, not the Editor.*
2. Send an e-mail to the editor. Include the following information in the body of the e-mail:
 - a. List names and affiliations of all authors.
 - b. Clearly designate the contact author and include contact information, including e-mail, phone, fax, and mailing address.
 - c. Abstract: Include a self-contained, non-technical abstract (which may be a repeat of the abstract from the paper itself). It should not contain formulas, references, or abbreviations. To maintain confidentiality, the abstract should not contain names or affiliations of authors.
 - d. Statement of Contribution: Briefly explain "why this paper is important" and "why this paper is of relevance to the readers of *The Engineering Economist*." This description is for the

- internal use of the editor and referees and will not be printed with the manuscript. It is intended to help expedite the review process and succinctly communicate the essence of the paper directly to the referees. For example, is the importance of the paper a new theory, a successful application, comparison of competing methodologies, a unifying tutorial, or some other particular relevance?
- e. Included with the statement of importance, a primary topic area must be designated from the list of areas designated earlier. Please consult the appropriate area editors or editor if you are in doubt as to which area is most appropriate.
 - f. A list of at least three suggested referees for which the author has no conflict of interest (i.e., referees cannot be former/current co-authors, from the same institution, or former advisor/teacher/student).
 - g. Any other information you feel is pertinent for the editor, such as a previous submission history of the article. The letter should also affirm that the material has not been copyrighted, published, or submitted for publication elsewhere.
3. Attach the manuscript (PDF) file to the e-mail and send it to the editor, Joseph C. Hartman, Lehigh University, jch6@lehigh.edu. *Note that only one file is to be sent to the editor.*

The editor will assign the paper to an area editor, who will communicate to you the outcome of the review process, including copies of referees' reports.

The authors of an accepted article must sign a copyright agreement. Upon acceptance of the paper, the authors will be responsible for direct transmittal of electronic files to the editor. These may include Microsoft Word, Word Perfect, or LaTeX (MS Word is preferred). Hardcopies must also be submitted at this time, along with all original artwork (including files, if that applies).

EDITORIAL POLICY

The editorial board will strive to meet the following: The editor will assign your submission a manuscript number and an area editor within one week of your submission. The Engineering Economist utilizes a double-blind review process. We will strive to have your reviews and a decision back to you within three months. If you do not hear from the area editor by that time, you may inquire as to the delay. Please refer to your manuscript number with all inquiries.