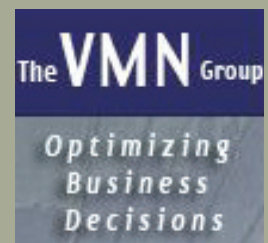


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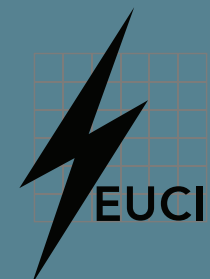
**Using Analytic Tools to Improve
Utility Asset Management:
Project Portfolio Management &
Managing Aging Assets**

February 26 – 27, 2007

Co-Sponsored By:



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Using Analytic Tools to Improve Utility Asset Management: Project Portfolio Management & Managing Aging Assets

February 26 – 27, 2007

OVERVIEW

Utility asset management has become a consultant-rich environment, but there are two things that distinguish this workshop. First, this workshop focuses on methods. You will learn about methods that can be applied to asset management problems that actually work and give correct answers to real questions. Second, this workshop addresses the fundamental problem of asset management – that is making the right investment and spending decisions in the context of economic value. For example, which projects to fund and which to defer, what assets to acquire, when to repair or replace assets, and when to retire assets. Asset management and strategic investment decision making is not about what data to collect, what management structure to set up, nor what the contribution of each asset is to the corporate bottom line. Those issues are subordinate and often peripheral.

There are two fundamental problems in Asset Management:

Project Portfolio Management – given finite resources, which proposed projects should be undertaken, which should be killed, and which should be delayed until later?

Managing Aging Assets – how to design decision strategies for managing aging system assets that (1) provide the performance required of the aging assets, with respect to reliability and customer satisfaction, at least cost, (2) reduce the risk of aging assets failing in groups, (3) provide a favorable anticipated cash flow for managing the aging systems.

In this workshop you will learn the methods that effectively address both of these problems. These methods have been successfully applied (1) to prioritize enterprise-wide utility projects and select portfolios of projects that maximize corporate value, (2) to develop repair/replace policies for a wide range of assets including underground cables, substation transformers, wood poles, and substation air breakers, and (3) to develop least-cost capacity expansion strategies

ATTENDEES WILL LEARN

Methods for Project Portfolio Management

- The basic principles for evaluating and comparing projects
- How to define effective project valuation metrics
- How to assess and manage project and portfolio risks
- How to structure data requirements and avoid wasted, expensive efforts
- What other utilities are doing and what works and what doesn't
- The pros and cons of the various tools available to support project portfolio management
- How to organize to solve the portfolio management problems, and what organizational traps to avoid
- The steps for implementing project portfolio management within your organization

Methods for Managing Aging Assets

- The basic principles of managing aging assets
- How asset condition can be represented
- How asset condition can be used to guide management policy
- How to combine data and expert judgment into a coherent representation of asset behavior
- Whether it is useful to test assets to determine their condition
- How to find the optimal (least cost) management policy
- How to determine whether additional data or information would be valuable
- How to organize for successful management of aging assets

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PROGRAM AGENDA

MONDAY, FEBRUARY 26, 2007

Registration and Continental Breakfast: 7:30 – 8:00 a.m.
Course Timing: 8:00 a.m. – 5:00 p.m.
Group Luncheon: 12:00 – 1:00 p.m.

SESSION 1: PROJECT PORTFOLIO MANAGEMENT

Do you have more project needs than resources to address those needs? This segment of the workshop will teach you the best-practice methods for evaluating and prioritizing projects, including capital investments and O&M spending. It will also describe the steps that are needed for implementing these methods within your organization.

1) Introduction to Project Portfolio Management

- What is the problem?
- What are solutions to the problem?
- State of practice

2) Examples and Insights

- Experience and observations
- Q&A

3) Project Portfolio Management—First Principles

- Principles of Project Prioritization
- Measuring project value
- Creating a project priority system
- Accounting for risk

4) Workshop and Case Studies

- Discussion of Case Studies: what worked, what did not, what we learned
- Creating Value Models – examples and discussion

TUESDAY, FEBRUARY 27, 2007

Breakfast: 7:30 – 8:00 a.m.
Course Timing: 8:00 a.m. – 5:00 p.m.
Group Luncheon: 12:00 – 1:00 p.m.

SESSION 1: PROJECT PORTFOLIO MANAGEMENT (continued)

5) Creating a Project Portfolio Management Capability at a Firm

- Organizing for PPM
- Selecting effective software tools

6) Summary and Conclusions

- What is the Project Prioritization problem?
- What are the specific prioritization decisions that companies face?
- What are the useful analytic tools?
- What data is required to apply tools and make decisions?
- What are the organizational issues?

SESSION 2: MANAGING AGING ASSETS

Do you have aging infrastructure assets and are you worried about the cost and reliability implications of these assets? This segment of the workshop will teach you the best-practice methods for managing these assets and show you how you can implement these methods within your organization.

1) Introduction to Managing Aging Assets

- What is the problem? Why is the problem important? What are the risks associated with aging infrastructure assets?
- What are solutions to the problem? What constitutes a strategy for managing aging infrastructure assets?
- State of practice - are assets being managed?

2) Experience

- Our experience and observations
- Q&A

3) First Principles

- Mathematical methods for optimizing asset portfolios
- What do analytic methods provide that other approaches do not?
- Condition-based analysis
- Accounting for risk - need for a learning model
- Value of testing
- Value of data
- Role of expert judgment

4) Workshop and Case Studies

- How to apply analytic methods to specific problems
- Discussion of Case Studies – what worked, what did not, what we learned
- Software

5) Summary and Conclusions

- What is the Aging Asset problem? Why is it important?
- What are the specific Aging Asset decisions that companies face?
- What makes an analytic tool useful?
- What data is required to apply analytic tools and create strategies for managing aging assets?

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ABOUT THE INSTRUCTORS

Stephen Chapel manages **S.Chapel Associates** a private consulting firm that specializes in utility planning and asset management. Chapel has more than 20 years experience in electric utility planning and asset management including engineering-economic decision making, financial valuation, and capital budgeting. His current focus is on transmission and distribution business planning and asset management. From 1980 through mid 2003 he was a senior project manager with the Electric Power Research Institute. Before joining EPRI, Mr. Chapel spent four years with the Rand Corporation as a senior economist. While there, he carried out research on economic, financial and institutional issues associated with the development of advanced technologies. Previously, Mr. Chapel was the Deputy Director for the Department of Energy's Office of Economic Impact. From 1968 to 1974, he worked for the Office of Systems Analysis in the Department of Defense.

Mr. Chapel has managed many highly successful projects for the Utility industry. He has expert knowledge of the utility business analysis methods combined with proven problem solving and analytical capabilities. He is well known for his ability to take projects from the conceptual stage to a practical implementation that has aided numerous utilities make better investment and operational decisions. Besides several journal articles and white papers he is also a co-author (with Mukund Thapa) of a soon to be published book on programming using C and C++ Pointers.

Mr. Chapel received a B.S. degree in Statistics (1966) and an M.S. degree in Economics (1968) from the University of Wyoming.

Dr. Charles D. Feinstein is Associate Professor of Operations and Management Information Systems at the **Leavey School of Business, Santa Clara University**. Dr. Feinstein is cofounder of VMN Group LLC, a quantitative consulting company. He also teaches in the Department of Management Science and Engineering at Stanford University and in the Department of Industrial Engineering and Operations Research at the University of California, Berkeley. Dr. Feinstein has over 25 years of experience in research, teaching and application of mathematical methods and modeling. His areas of expertise include optimization, decision analysis, system dynamics, and systems analysis. His previous employment includes positions as a Senior Decision Analyst at Applied Decision Analysis, Inc. and as a Research Engineer at Xerox Palo Alto Research Center. He has been active in the academic and professional communities and has published more than forty technical papers and reports as well as presented many lectures on both theoretical and applied research. His current interests include investment planning and risk analysis in the electric power industry. He has written and presented extensively on managing aging infrastructure, project prioritization methodologies, distribution system risk analysis, and the application of distributed resources to distribution planning.

Dr. Miley W. (Lee) Merkhofer is a well-known author and practitioner in the field of decision analysis. As President of **Lee Merkhofer Consulting**, he specializes in providing commercial and government clients systems for prioritizing projects and optimally allocating resources.

Before forming his own company, Dr. Merkhofer was a Partner of PricewaterhouseCoopers and a Principal of Applied Decision Analysis, Inc. He has developed dozens of priority systems, taught courses on the subject, and received professional awards for his work in the area. He is the author of the book *Decision Science and Social Risk Management* (Reidel Publishing Co.) and coauthor of the book *Risk Assessment Methods* (with V. Covello, Plenum Press).

Dr. Merkhofer received a B.S. degree in Physics, an M.S. in Electrical Engineering, and a Ph.D. in Engineering Economic Systems, all from Stanford University.

Dr. Peter A. Morris is the Co-founder of **VMN Group LLC**, a quantitative consulting company. He is also a Consulting Professor in the Department of Management Science and Engineering at Stanford University where he teaches the art of mathematical modeling and probabilistic systems. He served as Chief Executive Officer of Applied Decision Analysis, Inc. until ADA was acquired by PricewaterhouseCoopers in August, 1998; then he served as Managing Partner of the ADA subsidiary until May 31, 2001. Prior to joining ADA, Dr. Morris was with Xerox Corporation where he developed and applied quantitative modeling tools to a wide range of Xerox problems. Before that, he was the founding director of the DOD Modeling and Analysis Office and a systems analyst in the DOD Office of Systems Analysis. Dr. Morris holds a Ph.D. in Engineering-Economic Systems from Stanford University. He has been active in the academic and professional communities and was the president of the Decision Analysis Group of the INFORMS professional society. His areas of expertise include decision and risk analysis, probabilistic analysis and mathematical modeling

WORKSHOP PROCEEDINGS

The proceedings of the course will be published and one copy will be distributed to each registrant at the conference.

WORKSHOP LOCATION

A room block has been reserved at the Hilton San Francisco Financial District, 750 Kearney Street, San Francisco, CA 94108, for the nights of February 25 – 27, 2007. The rate is \$189 single or double occupancy, plus applicable tax. Call 415-433-6600 for reservations and mention the EUCI Conference to get the group rate. Make your reservations prior to January 27, 2007. Reservations after this date will be on a space available basis and **cannot be guaranteed at the course rate.**



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