



DAVID T. HULETT, PH.D., FAACE



Dr. Hulett is a Principal Consultant and Cost & Schedule Risk Analysis Partner affiliated with Long International. He has conducted many risk analyses, focusing on quantifying the risks and their implications for project cost and schedule, and many schedule assessments. Dr. Hulett is a Principal with Hulett & Associates, LLC (H&A), and has focused for the last 34 years on quantitative schedule risk analysis, integrated cost-schedule risk analysis, and project scheduling best practices. H&A clients are in oil and gas, chemicals, LNG, aerospace, construction, pharmaceuticals, and transportation. They are located in the U.S., Canada, South America, South-East Asia, Europe, and the Middle East.

H&A has pioneered the Risk Drivers approach as applied to schedule risk and integrated cost and schedule risk analysis, and Dr. Hulett has recommended adopting this method for new and emerging Monte Carlo software to serve the needs of his high-end risk analysis customers. Dr. Hulett has experience in applying Risk Drivers and risk prioritization using iterative simulations to large multi-year projects leading to proactive risk mitigation planning for better project results. From these analyses, the client learns: the probability of achieving the cost and schedule with the existing project plan, the amount of time and cost contingency required to achieve a desired level of certainty, which priority risks drove the analysis results, and which risk mitigation actions address the risks. In 2024, Dr. Hulett received the AACE International TCM Excellence Award in recognition of his risk analysis work.

Dr. Hulett has held strategic planning positions at TOSCO, an oil company with oil shale programs, and at TRW in aerospace and defense. In the federal government, Dr. Hulett managed offices in the Federal Energy Agency (FEA), the Department of Energy (DOE), and the Office of Management and Budget (OMB). He was an economist with the Federal Reserve Board of Governors. Dr. Hulett was also an Instructor in the Economics Department at Harvard University.

EDUCATION

Ph.D., Economics, Stanford University, 1966

B.A., Special Program for Public and International Affairs (Woodrow Wilson School), Princeton University, 1961

PROFESSIONAL AFFILIATIONS

Project Management Institute (PMI)

Fellow of Association for the Advancement of Cost Engineering (AACE) International

— 2024 TCM Excellence Award Recipient, AACE International

International Cost Estimating and Analysis Association (ICEAA)

International Center for Complex Project Management (ICCPM)

TECHNICAL EXPERIENCE

Representative cost and schedule risk analysis experience includes:

- Understanding the project's objectives and parameters, participants, and environment within which it is conducted.



- Evaluating the project schedule against industry-accepted best scheduling practices to ensure accuracy in Monte Carlo simulation.
- Supervising the application of summary-level resources costed without padding for risk to schedule activities.
- Interviewing project participants and other knowledgeable SMEs to derive candid and unbiased risk information including the identity of risks not already included in the Risk Register, the probability that the risk will affect the project cost and schedule, the impact if it occurs on activities' durations and costs (e.g., burn rate per day), and the activities that will be impacted (usually project phases such as construction, piping, commissioning) if the risk occurs.
- Modeling the risks' implications for the project schedule. Using modern Monte Carlo simulation software, deriving consistent integrated cost and schedule results that can show the possibility of finishing on time and on budget following the current plan and how much contingency of cost and time is needed to achieve a desired level of certainty. Implementing the Joint Confidence Level (JCL) approach to determine combinations of finish date and cost that can *both* be completed with a degree of certainty representing the owner's risk appetite and tolerance. Facilitating a risk mitigation workshop with the project team to develop a strategy to improve the project's prospects for finishing dates and cost at completion. Simulating the post-mitigation scenario to assess the workshop's work.

PROJECT EXPERIENCE

Dr. Hulett has conducted cost and schedule risk analyses for many projects and for commercial and government clients. Most recently, he has assisted energy companies with risk analyses of offshore production platform, pipeline, chemical, and other and processing plant projects. Representative projects include the following:

Chemical Plants

- A schedule risk analysis for a large, intermediate chemical plant construction project for BASF in Germany. For this project, the analysis team created an analysis schedule, which was a smaller representation of the detailed schedule. Other chemical plants analyzed include ones for thyssenKrupp and Petronas.

Liquefied Natural Gas Plants

- Performed a cost and schedule risk assessment for Anadarko's LNG plant to be constructed in Mozambique to commercialize an offshore gas deposit with offshore wells and piping and two offshore LNG trains. Export facilities require a jetty to be constructed. This project is fast approaching FID.
- Served as the owner's risk analysis expert in evaluating a claim by the contractors on a large LNG plant in Australia. Reviewed and commented on the contractor's cost and schedule risk analysis and prepared the owner's report. Supervised a Senior Associate's work to evaluate the quality of the project schedule and to repair faults in it that would affect the Monte Carlo simulation that he produced for the owner.

Offshore Natural Gas Production Platform

- Cost and schedule risk analyses for several offshore natural gas production platform projects including pipelines to shore in southeast Asia for Petronas, the national oil company of Malaysia. The analysis included modeling some interesting weather impacts on the success of the schedule. Another was risked for Petrobras in Brazil.



Natural Gas Processing Plant

- Schedule risk analysis of a natural gas processing plant for Encana in Calgary, Alberta. The plant is located in northern British Columbia. Some risks included the isolation of the project and the labor market for specific trades.

Export Refinery

- Cost and schedule risk analysis of the 400,000-barrel-per-day YANBU export refinery in the Western Province of Saudi Arabia for ConocoPhillips, then a partner with Saudi Aramco. ConocoPhillips withdrew from this project, and Total and Saudi Aramco completed it.

Natural Gas Pipeline

- Construction of a natural gas pipeline in Borneo for Petronas. Challenges included land ownership and access problems, fabrication of the pipeline, clearing and grading in a mountainous terrain with many water crossings, and securing a large compression station. Risk analyzed other pipeline projects for Petronas and Kinder Morgan as well.

Government Buildings Construction

- For the U.S. Government Accountability Office (GAO), prepared a cost and schedule risk analysis of the construction of the U.S. Capitol Visitor Center in Washington, D.C. Challenges included multiple prime contractors and construction linked to many historic and operating federal buildings, including the Capitol building. Analyses supported testimony to Congress.
- Cost and schedule risk assessment for the retrofit of the 100-year-old Cannon House of Representatives Office Building, a \$1 billion project over 10 years, for the U.S. Architect of the Capitol (AOC). The analysis was performed in phases, and Dr. Hulett performed this analysis four times. Other projects for the AOC include repair of the U.S. Capitol Building Dome and repairing/refurbishing the stone work on the U.S. Capitol building.
- Schedule risk analysis of modernization of the National Institute of Standards and Technology (NIST) headquarters in Gaithersburg, MD.
- Schedule risk analysis of the construction of the U.S. Department of Transportation headquarters building in Washington, D.C., for the U.S. General Services Administration (GSA). Challenges included the consolidation of the information systems of several DOT units that was to be accomplished in the move.
- Schedule risk analysis of the construction of a Veterans' Administration hospital in Las Vegas, NM, for the U.S. GAO. Challenges included analysis of a schedule that was incomplete and the intersection of the strategy of the construction company with the needs of the VA hospital personnel.
- Schedule and cost risk analysis for the relocation of the Department of Homeland Security (DHS) headquarters to the Anacostia campus of St. Elizabeths Hospital. Dr. Hulett performed this analysis three times for the General Services Administration (GSA) and the DHS.

PROFESSIONAL EXPERIENCE

Long International, Inc.

Los Angeles, California (November 2013 to Present)

Dr. Hulett is a Principal Consultant and a Cost & Schedule Risk Analysis Partner affiliated with Long International. He has conducted many risk analyses, focusing on quantifying risks and their implications



for project cost and schedule, and many schedule assessments. Dr. Hulett performs project cost and schedule risk analyses and evaluates project schedules against industry best scheduling practices.

Hulett & Associates, LLC

Los Angeles, California (1989 to Present)

Dr. Hulett is an Owner, Principal, and the President of Hulett & Associates, LLC, which specializes in project risk analysis and management. He has focused for the last 34 years on quantitative schedule risk analysis, integrated cost-schedule risk analysis, and project scheduling best practices. He consults for clients and teaches both in-house and public courses on risk, scheduling, and some Monte Carlo simulation packages.

Dr. Hulett's clients include commercial companies (*e.g.*, ConocoPhillips, Bristol Myers Squibb, McDonnell Douglas Aerospace, Northrop Grumman, Pfizer, Genentech, Kinder Morgan pipeline), national oil companies (Petronas in Malaysia and Petrobras in Brazil), and U.S. government agencies (*e.g.*, Department of Energy National Laboratories, National Nuclear Security Administration, Architect of the Capitol, Air Force bases, Government Accountability Office, Intelligence Community agencies, and NASA). Many of the projects have been large and recognizable (*e.g.*, the San Francisco–Oakland Bay Bridge project, the U.S. Capitol Visitor Center, the YANBU Export Refinery Project, and the move of the U.S. Department of Homeland Security to the new campus at the St. Elizabeths site).

Dr. Hulett has been an active participant and leader in developing industry standards for project risk management and analysis and project scheduling for the Project Management Institute (PMI) and the Association for the Advancement of Cost Engineering (AACE) International. He is also a leader in developing methodologies—for instance, the Risk Driver method for driving simulations and the iterative simulation approach to prioritize projects for risk mitigation using Monte Carlo simulation of project cost and schedule—as well as ensuring that evolving simulation engines (*e.g.*, Safran, Polaris, Acumen, and JACS) have this methodology built in.

TRW

Manhattan Beach, California (1984 to 1987)

Dr. Hulett was appointed as a Director in the Strategic Planning group in the TRW corporation headquarters in Redondo Beach, CA. He was subsequently assigned to the Commercial Electronic Equipment program business group exploring merger and acquisition possibilities. He then was Director, Development Planning for Systems and Equipment in the Electronic Components Group, conducting strategic planning until that division was spun off in 1987.

Tosco Corporation

Los Angeles, California (1980 to 1984)

Dr. Hulett was Director, Research in the Oil Shale Planning Department for TOSCO Corporation. In that position, he researched and prepared strategic plans for Tosco's domestic and international oil shale business. He was the main author of the economics volume of the company's successful application for a \$1.2 billion loan guarantee from the Department of Energy for the development of the Colony Oil Shale Project. He participated in negotiations with the French bank Paribas for a joint project to study oil shale mining for the King of Morocco. He also assisted in the analysis and negotiation with a consortium of Japanese companies for a joint venture oil shale project in Utah, the Sand Wash Oil Shale Project.



Department of Energy (DOE)

Washington, D.C. (1977 to 1980)

In the new U.S. Department of Energy, Dr. Hulett was the Director of the Energy Source Analysis office. He supervised the analysis and forecasting of the U.S. supply of energy from oil and gas, coal, electrical, nuclear, and emerging technologies. He was responsible for the volumes of the analysis and forecasting segments of the annual report to Congress from the Administrator of the Energy Information Administration.

Federal Energy Agency (FEA)

Washington, D.C. (1977)

Dr. Hulett was the Assistant Administrator of Data and Analysis in the U.S. FEA. As such, he directed staffs in the analysis and forecasting of the nation's demand and supply—including oil and gas, coal, electrical, nuclear, and emerging technologies—and collection of energy data. He held this position until the formation of the U.S. Department of Energy in late 1977.

Office of Management and Budget (OMB)

Washington, D.C. (1970 to 1977)

Dr. Hulett was the Chief of the Economic Statistics branch of the OMB's Statistical Policy Division. He managed a staff that was responsible for budgeting, coordinating, and forms clearance for the economic statistics activities of the main statistical agencies including the Bureau of Labor Statistics, the Census Bureau and the Bureau of Economic Analysis of the Commerce Department, the IRS of the Treasury Department, and the statistics division of the Agriculture Department.

Board of Governors of the Federal Reserve System (FRB)

Washington, D.C. (1967 to 1970)

Dr. Hulett was a research economist in the Division of Research and Statistics at the Federal Reserve Board (FRB). His responsibilities included estimating equations for financial sectors for the FRB-MIT-Penn Econometric Model of the United States. Several people at the participating organizations estimated this model, which was used to analyze the economy and monetary and fiscal policies.

Harvard University

Cambridge, Massachusetts (1965 to 1967)

Dr. Hulett was an Instructor in the Department of Economics at Harvard. He had responsibility for developing and teaching undergraduate courses in Money and Banking and in Capital Markets as well as teaching sections of the introductory economics course. He had advisory responsibilities and conducted econometric research into money and banking issues. He was consistently rated as one of the best teachers in the department.

PUBLICATIONS AND SPEAKING ENGAGEMENTS

“Principles for Quantitative Project Risk Management,” with James Arrow, March/April 2023.

“Cost and Schedule Risks Interact in Megaprojects,” with Waylon Whitehead, November/December 2020.

“Identifying the Most Probable Cost – Schedule Values from a Joint Confidence Level (JCL) Analysis,” with Sam Steiman, July/August 2020.



- “Journey Map to a More Mature Schedule Risk Analysis (SRA) Process,” Cost Engineering, AACE International, March/April 2019.
- “Integrated Cost-Schedule Risk Analysis Using Risk Drivers and Monte Carlo Simulation and a CPM Schedule,” Recommended Practice 57R-09, AACE, Revised 2018.
- “The Monte Carlo Method for Modeling and Mitigating Systemic Risk,” with Waylon Whitehead, July/August 2017.
- “What to Do with Unknowns in Schedule Risk Analysis,” July/August 2016.
- “Integrated Cost and Schedule Risk Analysis,” with Andrew Avalon, P.E. PSP, Long International, Inc., June 2015.
- “Integrating with Project Schedule Risk Improves Analysis of Cost Risk,” with Eric Druker, May/June 2015.
- “Use Decision Trees to Make Important Project Decisions,” July/August 2014.
- “Integrated Cost-Schedule Risk Analysis Using the Risk Driver Approach,” Qatar PMI Meeting, February 19, 2014.
- “Integrated Cost-Schedule Risk Analysis,” with Michael Nosbisch, Cost Engineering Journal, November/December 2012.
- “Integrated Cost-Schedule Risk Analysis,” Gower, 2011.
- “Practical Schedule Risk Analysis,” Gower, 2009.
- “Practice Standard for Project Risk Management,” PMI, Deputy Project Manager, 2009.