

Dr. Alex Pavlak

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Main accomplishments and key skills:

- Successfully led an international team to develop an unprecedented sonar system for detection of quiet submarines.
- Strong and broad background in business, engineering, and science.
- Experienced with system architectures, business and strategic planning, project management, development projects.
- A deep generalist with an appreciation for structure, relationships, the big picture and major trends.



2010 – Present: Chairman, Future of Energy Initiative

- An open source working group with the purpose of easing the transition to a post fossil fuel economy.

2010 – 2012: Adjunct Professor of Energy, University of Maryland

- Teaching ENMG698, Strategic energy scenarios, a multidisciplinary graduate project course

1993 - 2010: President, Thales Research, Inc.

- Designed a static solar photovoltaic concentrator based on previously patented optical technology.
- Designed a variable speed wind turbine based on a continuously variable transmission.
- Created and offered public and private workshops on Creating System Architecture, Modern Tiger Teams, Total Problem-Solving.
- Expert problem solving teams: Under grants for NSF and NIMH, organized workshops and supported leading scientists addressing fundamental questions in basic science.
- Co-coordinator, Strategic Leadership Seminar Series, a public service of the PMI-WDC chapter, Strategic Leadership Network, and George Mason University. Federal Interagency Communities of Practice: consulting and support small group aspects, governance.
- Guest lecturer, Johns Hopkins University, Modern Tiger Teams.
- Dinner speaker on expert teams, total problem-solving, enterprise architecture.

1984 - 1992: Program Director, ASW Development Programs, Martin Marietta

- Orchestrated the development of TAVA, a new tactical anti-submarine warfare system concept. TAVA was effective for detecting quiet submarines. Variants of this system concept are being built and sold today.
- TAVA development included international sea trials: demonstration with U.S. Navy and NATO against a Greek submarine in the Mediterranean.
- Responsible for business and technical strategies, planning, proposals and leading development teams.
- Managed \$11M R&D investment/contracts.
- Negotiated R&D teaming agreement between Martin Marietta and the French Government.
- Orchestrated teams that created system architectures for several large ASW systems.

1976 - 1983: President, ConSuntrator Inc.

- Co-founder, Solar energy research and development company.
- Raised venture capital from 20 investors,

- Responsible for technical strategies, business planning and operations.
- Negotiated R&D contract with Phillips Petroleum Co.
- Managed a \$10m (2010\$) product development program at Phillips Petroleum R&D center.
- Invented a non-imaging optical concentrator: optimal concentration of sunlight without moving parts. 18 patents.

1968 - 1976: Research Engineer/Scientist, General Electric Co.

Managed research and development programs and contracts in:

- experimental hypersonic boundary layer transition
- lake ice physics;
- liquid acoustic lenses;
- signal processing;
- river sedimentation;
- Jupiter probe sensors;
- oceanographic buoys;
- ocean wave spectra;
- power plant thermal plumes;
- stress in shells exposed to nuclear explosive pulse;
- stability of VHF air/sea comm links;
- covert buoy concepts;
- invented and patented linear inductive electric generator.

Education, Awards, Honors

- B.E., M.E., Ph.D., Mechanical Engineering, Stevens Institute of Technology.
- Post graduate courses, University of Pennsylvania.
- Licensed professional Engineer, State of Pennsylvania.
- Project Management Institute certified Project Management Professional.
- Elected U.S. industry representative for UDT Symposia (Paris),
- Member: INCOSE, World Future Society, AAAS, Sigma XI, Tau Beta Pi, Smithsonian, IEEE, Project Management Institute, Association of Enterprise Architects.

Personal Passion

Man has an unexplored opportunity to expand his inductive reasoning performance by working together in special teams. Teamwork tools have evolved to the point where Special Expert Teams can reach beyond the limits of individual imagination.

Patents

- 2008 - Compound Parabolic Concentrator Modules, # 61/130,715
- 1981 - Solar Energy Collector Construction, # 4,263,893 + 4 foreign patents
- 1981 - Solar Energy Reflector Collector, # 4,263,893 + 4 foreign patents
- 1977 - Solar Energy Reflector Collector, # 4,024,852 + 4 foreign patents

Papers and publications:

- Pavlak, A., [Enterprise Architecture as Strategic Vision](#), *Journal of Enterprise Architecture* 4:2, pp. 31-34, May, 2008.
- Pavlak, A., [Architecture Governance: Management Structure for Creating Architecture](#), *Architecture and Governance* 3:4, November 2006, pp. 28,29.
- Pavlak, A., [EA Value Proposition](#), August 5, 2006, unpublished
- Pavlak, A., Enterprise Architecture: [Lessons Learned form Classical Architecture](#). *Journal of Enterprise Architecture* 2:2, 2006, pp. 20-27.
- Pavlak, A., "Simplify the [Creation of Enterprise Architecture](#) with Special Expert Teams," *Journal of Enterprise Architecture* 1:1, 2005, pp. 29-35.
- Pavlak, A., [Project Troubleshooting: Tiger Teams for Reactive Risk Management](#), *Project Management Journal* 35:4, 2004, pp. 5-14.

- Pavlak, A., [Modern Tiger Teams, Team Management Lessons from the Space Shuttle Columbia](#),” unpublished.
- Pavlak, A., “NASA [Decision Making Governance](#),” Sept 15, 2005, unpublished.