

Fred Schenkelberg

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Senior Reliability Consultant with strong leadership, reliability and manufacturing experience. Managed complex technical projects blending skills in reliability engineering, printed circuit assembly, physics, statistics and manufacturing processes. Strong skills in product reliability, project management, advanced statistical methods, statistical process control, experimental methods, and presentations.

EXPERIENCE/ACCOMPLISHMENTS

FMS Reliability

2004 to Present

Product Reliability Management and Engineering Services

Started a consulting business providing product reliability services to product teams across all phases of the life cycle, generating \$500k revenue the first full year. Organization, process and product reliability assessments, risk mitigation, program design, and escalation management are examples of services. Depth of expertise in reliability statistics, accelerated life test design and analysis, and design for reliability tools.

- Work with customers on developing end-to-end reliability solutions. For a medical device design team conducted detailed analysis of existing field data providing focus to design team for the next product. Developed detailed reliability plan and provided guidance to implement advanced reliability tools. Results included achieving reliability objectives and reducing product field failure rate by half, saving over \$300k the first year.
- Implement Design of Experiments on real customer issues. A short seminar with a design team resulted in experimental results in design improvements for a home medical device identifying and reducing product returns, saving over \$100k annually. A second engineer used the seminar information and in one day optimized a airflow saving two weeks of design effort and possibly 3 or more prototype attempts.
- Set up and implement accelerated life tests. For a high tech telecommunication design team, designed and implements an accelerated test tailored to the dominated failure mechanisms for a new product in a new environment, resulting in design improvements and validation permitting the successful launch of a \$50 million product line.
- Teach seminar curriculum for overall reliability integration as well as specific tools. In a oil exploration equipment company, taught both the FMEA process and coached FMEA session facilitators, saving consulting fees for future sessions of \$20k annually while improving results of FMEA sessions.

As of 2009 worked with over 100 companies across medical, energy, aerospace and high tech industries. Currently teach a graduate level course Engineering Management with the University of Maryland.

Hewlett-Packard Company

1996 to 2004

Design for Reliability Consultant, Electronic Systems Technology Center

1998 to 2004

Lead world-wide HP product reliability community of practice. Provide solutions and consulting on over 200 calls for assistance annually. Lead consulting projects ranging from establishment of reliability prediction model to printed circuit assembly contract manufacturing assessment.

- Identified opportunity and facilitated strategic shift of 60 person consulting organization to focus on product reliability issues. The program included proposing a bonus structure change for senior officers to include product warranty as a significant factor. Implementation of new bonus plan brought focus and implementation of warranty reduction programs across the corporation, resulting in over \$500 million in annual savings.

- Investigated cracked ceramic capacitors. Assisted in saving one product line an estimated \$100 million. Consulted with 11 other product lines to help quickly identify and resolve causes of cracks. Established and maintain company wide reliability issue alert system.
- Conducted Bellcore (Telcordia) reliability prediction on very short notice for a sales team. Result found two previously unidentified reliability issues and secured \$15 million purchase of product.

Design for Manufacturing Engineer, Vancouver Circuits Manufacturing 1996 to 1998

Lead world-wide VCM plastic ball grid array (PBGA) process development program. Responsible for the manufacturability and world-wide assembly of the Rogue Main PCA.

- Designed and executed solder joint reliability study for 208 PBGA. Validated part robustness, which influenced purchase of \$3 million in components annually for one product line.
- Negotiated numerous manufacturability issues with lab and procurement partners around design of Rogue Main PCA, from bread board phase to manufacturing release phase. Effort to shorten the prototype turnaround from design release to prototype ready for testing resulted in systemically shortening from 7 to 10 days to 2 days.
- Developed and documented the PBGA design guidelines for the Vancouver site

Raychem Corporation, Menlo Park, California 1989 to 1996
Scientist/Engineer, Chemelex Division 1992 to 1996

Lead product testing improvement programs for Chemelex Division of this \$1.5 billion materials science company. Responsible for project management, experimental design, conduct and analysis of research projects supporting heating cable product sales of \$162 million. Provided statistical consulting for new product development efforts.

Created product lifedata analysis method, which reduced test time from 9 months to 2 weeks for same results, and at 6 month of test time improved results accuracy from +/- 10 years to +/- 1 year for a 20 year prediction. This permitted design considerations of expected product life during early design phase. Evaluated 15 technologies and handed off effective technique to Corporate R&D to measure resistance for conductive polymer characterization.

Manufacturing Engineer, Chemelex Division 1990 to 1992

Responsible for process improvement, product yield improvement, cost reduction and product or process changes for product families with \$20 million of annual sales. Managed process improvement team in polymer compounding area resulting in annual yield saving of \$100k annually.

Swing Shift Supervisor, Chemelex Division 1989 to 1990

Managed the product flow, work assignments, training, reviews, hiring and firing of 20 operators. Team leader for Sparking and Printing Quality Improvement Teams. Lead operators in two areas during transition to self-managed teams.

Division Safety Manager, Chemelex Division 1989 to 1991

Facilitated Division Safety Management Team for two years. Responsible for regulatory compliance, accident investigation and management of division's Make-It-Safe suggestion program. Performed duties concurrent with manufacturing engineer and supervisor positions. Authored and implemented Division-wide smoke free environment, resulting in insurance savings greater than \$10k annually.

Officer, United States Army

1983 to 1989

As Battery Commander, lead staff of 15 soldiers who supervised, supported and trained 600 soldiers annually. As Battalion Fire Direction Officer, provided key leadership, training and computer expertise for ballistic solutions and target selection.

EDUCATION

Stanford University, Stanford, California, M.S., Statistics, 1997

United States Military Academy, West Point, New York, B.S., Physics, 1983

PROFESSIONAL AND COMMUNITY ACTIVITIES

American Society for Quality, Certified Reliability and Quality Engineer (CRE & CQE)

RAMS Management Committee member – currently Vice Chair Registration

American Society for Quality - currently Reliability Division Chair

Society of Reliability Engineers – currently Silicon Valley Chapter Chair

Institute of Electrical and Electronics Engineers, currently Reliability Society Chapter Vice President