

Michael Cramer

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- Objective** Direct an operations business unit or function in a for-profit or non-profit organization that requires broad corporate leadership experience.
- Summary** Operations troubleshooter who has developed and manufactured technology-driven products. Experience includes product design and development, from understanding customer requirements through first-article testing to the production flip. Implemented Lean Manufacturing and Six Sigma principles factory-wide. Process- and data-driven manager who places great importance on teamwork.
- Experience** **FuelCell Energy**, Danbury, CT 9/1997 – 4/2019
- Director of Operations, Advanced Technology (1/2016 – 4/2019)
- Developed and implemented operational tools in the Advanced Technology Group, including proposal, contract, and budget processes. Tools developed cover labor, project status reports, and overall business unit profitability.
 - Implemented proposal development and contract closure business process.
 - Responsible for hydrogen generation and separation technology portfolio.
 - Developed market analyses and product development roadmaps for hydrogen and SOFC technologies.
 - Managed bench-scale and pilot projects to develop high-temperature PEMFC technology for hydrogen separation applications.
- Director, Cell Manufacturing Technology Transfer Program (9/2013 – 1/2016)
- Responsible for managing program to transfer repeating component manufacturing technology and support new \$100M factory in Pohang, South Korea.
 - Lead procurement team to specify, procure, install, commission, and qualify \$50M of equipment required for new facility, doubling the worldwide capacity for Direct FuelCell manufacturing. Development of an automated assembly and welding line to increase capacity and improve product quality and ergonomics.
 - Lead training team in providing documentation on manufacturing processes as well as training and certifying Korean staff for new facility.
- Director, Fuel Cell Module Production (11/2009 – 9/2013)
- Responsible for the 24/5 Final Assembly operations and 24/7 Test and Conditioning operations, including continuous improvement and doubling production capacity.
 - Expanded Lean program by creating Lean Implementation Team. Implemented 6S, Value Stream Maps, Training Within Industry and Standard Work throughout factory.
 - Managed Stack Technology Transfer Program (STTP) to transfer stack technology and manufacturing processes to POSCO Energy, FCE's Korean partner. Lead efforts in: transfer of technology; layout, capital equipment and tooling for new \$20M production facility; training and certification of POSCO personnel; and startup of new facility.
 - As STTP Program Manager, lead development of internal processes for supporting long-term partnership with POSCO Power, including: repeating component inventory management, intellectual property management, communication of design and process changes, and product quality management.
- Senior Manager, Final Assembly (10/2007 – 11/2009)
- Developed value stream maps for Final Assembly to meet production ramp goals. Implemented lean manufacturing principles, such as 5S and point-of-use tooling.
 - Lead effort to move to new facility, including management of project schedules, \$4.2 million of capital equipment procurement, oversight of contractors and transition to the new facility without interruption of the production schedule.

- Implemented new training program (Training Within Industry) to ensure a fully capable workforce as the staff doubled to support the production ramp to 3x baseline.

Manager, Strategic Projects (3/2007 – 10/2007)

- Managed \$14.5 million Engineering Department budget. Created budget reporting system, allowing department and program managers to see monthly program status.
- Implemented and managed \$330k TRIZ training program to promote innovation throughout FCE technical staff. Won \$75k of state funding to support program. Coordinated training of 50% of the technical staff from introductory courses to the “TRIZ Practitioner” level with over 200h of course time.
- Performed market analysis of direct fuel-cell / turbine hybrid high-efficiency product, providing key product market and sizing direction. Supported quality-function deployment (QFD) team and transformed customer requirements into product development goals.
- Managed 14 engineers and designers in Product Engineering for four concurrent programs, meeting program schedule and design requirements.

Manager, Module Engineering (9/2004 – 3/2007)

- Lead 19-person team in cost reduction, performance improvement, and reliability improvements for FCE’s core subsystems.
- Decreased cost of MW-class module by 25%, while improving performance and life.
- Decreased cost of sub-MW-class module by 20%, while improving performance.
- Led Integrated Product Team to improve efficiency of company-wide operations related to the fuel-cell module.
- Developed new Product Development and Design Processes

Manager, Repair Development Center (9/2002 – 9/2004)

- Created Repair Development Center (RDC), a seven-person facility to rework fielded fuel-cell modules. Focused on use of lean manufacturing methods to increase throughput and decrease manpower requirements.
- Integrated RDC and Final Assembly operations through informal processes.
- Accelerated technology stack builds to permit a 25% increase by applying lean manufacturing to reduce manpower and lead-time requirements.

Supervisor, Technology Stacks (9/1997 – 9/2002)

- Lead development of multiple new components, authoring six U.S. patents.
- Lead three-person technology stack assembly team, accelerating technology stack builds using Lean Manufacturing techniques.
- Maintained documentation of all molten carbonate fuel-cell designs, including drawing and bill-of-material generation and change management.
- Developed new standard work for design process methodology, including solid modelling and FEA software, training, and methodology implementation.

Education

B.S., Mechanical Engineering, Stanford University
 M.S., Mechanical Engineering, University of California, Berkeley
 Executive M.B.A. with a concentration in Finance, University of Connecticut
 Managing Complex Product Development, Sloan School of Management, MIT

Certifications

Level 3 TRIZ Certification (TRIZ Practitioner), International TRIZ Association
 Lean Manufacturing Leadership, CONNStep

Other

Assistant soccer coach, high-school marching band volunteer.
 Interests include aikido, wushu, qigong, and bee keeping.

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