

STEVEN WACHS
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QUALIFICATIONS

Possesses extensive experience in the application of statistical methods to optimize manufacturing processes, product designs, quality, reliability, and customer satisfaction. Background includes the application and training of reliability analysis, designed experimentation, statistical process control, mathematical modeling, and general statistical methods.

Currently vice president and principal statistician of Integral Concepts, Inc., and formerly a statistician and Six Sigma Blackbelt at Ford Motor Company. Consults with and educates many large manufacturing companies to resolve complex manufacturing problems and apply statistical methods appropriately. Also has provided instruction on behalf of the University of Michigan Center for Professional Development (Reliability Certificate Program) and Eastern Michigan University Center for Quality (various courses in statistical and quality methods).

PROFESSIONAL EXPERIENCE

INTEGRAL CONCEPTS, INC. West Bloomfield, Michigan 2003 – Present
Specialists in optimization of product designs & manufacturing operations

Vice President & Principal Statistician (2003 – Present)

- Assisted manufacturers in solving complex product design and manufacturing problems
- Developed and maintained an education program in statistical and problem-solving methods
- Educated our clientele in statistical methods to optimize product quality and reliability

Accomplishments

- Saved our clients millions of dollars by reducing product variation and waste
- Saved our clients millions of dollars by improving productivity and quality
- Applied DOE and Reliability methods to increase robustness of product designs
- Minimized our clients' product liability risk by improving product designs and by providing supportive data analyses
- Provided stimulating education in statistical methods (reliability analysis, statistical process control, designed experimentation, hypothesis testing, regression, problem solving)

FORD MOTOR COMPANY, Dearborn, Michigan 1992 – 2002
Automobile Manufacturer

Statistician & Six Sigma Blackbelt (2000 – 2002)

- Led projects to reduce variation and improve quality in manufacturing, logistics, and business operations. Estimated savings per project exceeded \$250,000.
- Developed a statistical algorithm to detect early warranty concerns and received patent.
- Supported Ford Scientific Research Laboratory with statistical analyses related to vehicle and technology research.

Information Technology (1995-2000)

- Held a variety of positions with increasing responsibility. Positions included business analyst, business specialist, business planning supervisor.
- Led development of strategic and business plans for purchasing systems department (\$30 million dollar budget).
- Led development of purchasing systems global IT application infrastructure for interfacing functions and new markets.
- Led customer team in deployment of common global purchasing system.

Buyer, Global Purchasing Organization (1992-1994)

- Developed global commodity sourcing strategy for advanced electronic modules.
- Managed commercial relationship (pricing, delivery, quality, technology) with Tier I suppliers of various components and subsystems.
- Negotiated long term contracts with Tier I suppliers.

ANDERSEN CONSULTING (NOW ACCENTURE), Pittsburgh, Pennsylvania 1987 – 1991
Information Technology Consulting Company

Senior Consultant (1989 – 1991)

- Designed, programmed, installed, and tested business application software.
- Managed product support group for computer aided software engineering (CASE) tool.

EDUCATION

UNIVERSITY OF MICHIGAN, Ann Arbor, Michigan
M.A. Applied Statistics, 2002
B.S. Mechanical Engineering, 1986 (Summa Cum Laude)

KATZ GRADUATE SCHOOL OF BUSINESS, UNIVERSITY OF PITTSBURGH,
Pittsburgh, Pennsylvania
M.B.A., 1992 (Associates Fellowship and Highest Honors)

PUBLICATIONS /PATENTS

What is a CUSUM Chart and When Should I Use One? Article for Datanet Quality Systems Newsletter, March, 2010

How do I Implement SPC for Short Production Runs?, Article for Datanet Quality Systems Newsletter, August, 2009

How should the sample size be selected for an X-bar chart?, Article for Datanet Quality Systems Newsletter, October, 2008

How do I choose the appropriate type of control chart?, Article for Datanet Quality Systems Newsletter, September, 2008

How do I know what product or process characteristics to control?, Article for Datanet Quality Systems Newsletter, August, 2008

What is a standard deviation and how do I compute it?, Article for Datanet Quality Systems Newsletter, July, 2008

What is the relationship between process stability and process capability?, Article for Datanet Quality Systems Newsletter, May, 2008

How do I test my data for normality?, Article for Datanet Quality Systems Newsletter, January, 2008

How do I control a process that trends naturally due to tool wear?, Article for Datanet Quality Systems Newsletter, December, 2007

What is the philosophy of Process Control (rather than Product Control)?, Article for Datanet Quality Systems Newsletter, November, 2007

“Advanced Statistical Methods”, Textbook for a 16-hour course published and copyrighted by Integral Concepts, Inc., 2007.

“Capability Indices Can Deceive.” Manufacturing Engineering, November 2005 Vol. 135, No. 5.

“Introduction to Quality: Concepts and Methods”, Textbook for an 8-hour course published and copyrighted by a client of Integral Concepts, Inc., 2005.

“Regression Analysis”, Textbook for an 8-hour course published and copyrighted by Integral Concepts, Inc., 2005.

Patent: *Method For Analyzing Warranty Claim Data*, assigned to Ford Motor Company, 2004.

“Reliability Analysis”, Textbook for a 32-hour course published and copyrighted by Integral Concepts, Inc., 2003.

“Statistics, Hypothesis Testing, & Regression”, Textbook for a 32 hour course published and copyrighted by Integral Concepts, Inc., 2003.

“Variation & Statistics”, Textbook for a 16-hour course published and copyrighted by Integral Concepts, Inc., 2004.

SPEAKING ENGAGEMENTS

Your Profit is On the Line: Five practical steps to manufacture the highest quality product for the lowest possible cost, Webinar sponsored by Quality Magazine, Datanet Quality Systems, and Integral Concepts, March 2010.

“Product Design and Manufacturing Optimization Using Statistical Methods”, 4-Day workshop covering Design of Experiments and Reliability Analysis, Sponsored by IBN International, Kuala Lumpur, Malaysia, November, 2008.

“Driving Quality with Effective SPC Implementation,” National Manufacturing Week 2008 Conference, Chicago, IL, September, 2008.

“SPC Workshop,” Detroit Quality Exposition and Conference, Detroit, MI, June, 2008

“SPC Overview”, NEPCON, OEM New England and Assembly New England Exposition and Conference, Boston, MA, April, 2008.

“Common Misapplications of SPC”, Chicago Quality Exposition and Conference, September 2007.

“SPC Workshop,” Detroit Quality Exposition and Conference, June, 2006.