

**UNIQUE SIX SIGMA
CREDENTIALS
of Prof. Desphande
and **SAC****

SIX SIGMA & ADVANCED CONTROLS, INC.

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- In his forty plus years of stay in the United States, Pradeep Deshpande, President of SAC, has not come across anything quite like six sigma because of its ability to improve the performance of *all* human work-processes. Six sigma can transform entire nations, not just enterprises.
- While Motorola developed six sigma in the late seventies and early eighties and General Electric popularized it during the nineties, Prof. Deshpande and SAC are credited with having deciphered what makes six sigma possible in the fundamental sense, based on natural laws that he articulated. This fundamental understanding makes it possible to unequivocally assert that six sigma can be used to improve the performance of all human activities (work processes). This fundamental understanding also has led to six sigma training materials of exceptional clarity at SAC. The writer is perhaps the only educator in the world with internationally recognized expertise in six sigma.
- It gives the author a sense of joy having deciphered that the very foundation on which six sigma rests, the notion of cause and effect (*karma*), is an ancient Indian concept.
- Six sigma concepts originally developed at Motorola were meant for static systems. Six Sigma and Advanced Controls, Inc., (SAC) has made pioneering contributions to six sigma by extending its applicability to dynamic systems. Further, Prof. Deshpande advanced the state of the art of six sigma and process control in 2008 with which it will become possible to further enhance quality, productivity, and competitive position. These advances are reported in two reputed publications listed below. When their ideas and concepts are combined with traditional six sigma tools, it becomes possible to implement six sigma concepts on any work-process, manufacturing (discrete-parts manufacturing, batch, continuous) or transactional, linear or nonlinear, static or dynamic.
- In his recent monograph "**A Small Step for Man: Zero to Infinity with Six Sigma**", Prof. Deshpande has shown how to enhance global competitiveness, improve health with Pranayam, and promote interfaith and inter-caste understanding, racial harmony, and global peace. The Dean of the top-rated Kellogg School of Management at Northwestern University wrote foreword to the monograph. Pradeep's work has received rave reviews from the likes of Nicolas Sarkozy, President of France, Dr. John F. Welch, Jr., Dr. Mikel Harry, Mr. Sam Pitroda, Dr. Vasant Gowariker, Scientific Adviser to several Indian Prime Ministers, and Dr. James R. Ramsey, President of the University of Louisville.

Prof. Deshpande is credited with pioneering six sigma publications.

- Deshpande, P. B., **Six Sigma for Karma Capitalism**, Six Sigma and Advanced Controls, Inc., Jan. 2011.
- Deshpande, P. B. and Tantalean, R. Z., **Process Controls and Optimization**, Six Sigma and Advanced Controls, Inc., January 2011.
- Deshpande, P. B., "**On Enhancing Chemical Engineering Curriculum and Competitiveness of Chemical Industries**", *Chemical Weekly*, 22 June 2010.
- Deshpande, P. B., "**The Six Sigma Green Belt Training Program: An in-depth look**", *Hydrocarbon Processing*, April 2010.
- Deshpande, P. B. and Tantalean, R. Z., **Unifying Framework for Six Sigma and Process Control**, *Hydrocarbon Processing*, June 2009.
- Deshpande, P. B., "**A Small Step for Man: Zero to Infinity with Six Sigma**", Six Sigma and Advanced Controls, Inc., Louisville, KY January 2008.
- Deshpande, P. B., S. L. Makker, and M., Goldstein, "**Boost Competitiveness via Six Sigma**", *Chemical Engineering Progress*, 95 (9), Sept. 1999.
- Deshpande, P. B., "**Emerging Technologies and Six Sigma**", *Hydrocarbon Processing*, p. 55 April 1998.

Prof. Deshpande's work in six sigma has been widely cited. Some examples are:

Professor Deshpande has served as Leader of AIChE's (American Institute of Chemical Engineers National Headquarters) and FSCT's (Federation of Societies of Coating Professionals, International Headquarters) past Training Program on "Six Sigma for Global Competitiveness".

- **"Six Sigma and the Dabbawallahs"**, Wake up to Money Program, BBC Radio-London Interview, November 6, 2003. The 3-minute radio interview is available for listening at the website link listed above.
- **"Putting Six Sigma Processes to Work"**, *Chemical Engineering*, November 2003.
- **"Increased Implementation by Corporates Essential"**, *The Financial Express*, August 7, 2001.
- **"Six Sigma Boosts the Bottom Line"**, Editorial Update, *Chemical Engineering Progress*, April 2001.
- **Lunch Box Boys Show Up Six Sigma**, Editorial Update, *Chemical Processing*, May 2004.
- **Analyze This: Why Dabbawallahs to Fortune 500 Firms are Hooked to Six Sigma**, *"Indian Express"*, Feature Article, April 19, 2004.
- **India should use 6 Sigma to catch up with the world**, *The Times of India*, June 16, 2004.
- **Six Sigma Enlightenment**, BUSINESSWORLD, October 4, 2004.
- **The Genius of Patanjali**, Letter to the Editor, *India Abroad*, June 23, 2006
- **66: Victory may be achieved this way too**, SAKAAL Newspaper, Pune, October 2, 2006
- **Karma Yoga and Six Sigma**, Letter to Editor, *Business Week*, November 13, 2006.
- **Breath as Life Force, Professor Puts Stocks in ancient technique from India**, *Business First*, November 10, 2006.

Accomplishments:

Some of the best-known multinational corporations and organizations here and abroad are clients of Six Sigma and Advanced Controls, Inc. They include US Department of Defense, Ministry of Higher Education, State of Kuwait, DuPont, Kuwait Petroleum Corp., Oil & Natural Gas Corp. (India), Zeon Chemicals, LLP, Colgate-Palmolive Co., Frito Lay, Inc., and Mercer, Inc., among others.

Prof. Deshpande was the first to introduce six sigma training for college students.

Six years ago with a license to the instructional materials from SAC, Prof. Deshpande began to offer a graduate course in six sigma for chemical engineering students at the University of Louisville. University of Louisville then emerged as the first University to offer six sigma training to chemical engineering students. Enrollment in the Fall'04 offering was open to students regardless of major provided they have had a first course in statistics. The Fall'07 class, which again has the maximum permitted number enrolled, includes students from chemical, electrical, mechanical, & industrial engineering departments. We have been providing mandatory Six Sigma Green Belt training for the students in the new and innovative MBA program of the Gatton College of Business and Economics at the University of Kentucky in Lexington for the last two years and have also conducted six sigma training for UK's MBA students at TEI/Piraeus in Athens, Greece. We have introduced six sigma in the MBAPrograms of three B Schools in India.

Partnering with Symbiosis Center for Management and Human Resource Development, Pune, Prof. Deshpande established SCMHRD-SAC, USA National Six Sigma Excellence Awards for India, Inc. in 2005. Some of the best companies submitted entries to the first-in-the-world awards competition.

Prof. Deshpande's teaching skills are internationally recognized. He is a recipient of numerous awards for teaching and research and has authored six textbooks. The evaluation of participants in all of his six sigma training programs in the United States and abroad have been outstanding. Here is a sampling of student comments taken from the teaching evaluation forms at the University of Louisville:

"Finally, a course that I can apply to real life".

"Has genuine interest in helping students succeed in industry".

"Very enthusiastic about the subject; this helps me to be interested".

"I find the concept extremely useful and applicable across many businesses".

"Very effective; good PowerPoint presentation".

"Very concerned that students understand the material".

"This course should become a permanent addition to the curriculum".

Commenting on the amount and depth of new knowledge gained, *"Very much. I look forward to continued learning in this area".*

Commenting on the effectiveness of the instructor, *"Very well prepared".*

Commenting on the instructor's attitude towards students, *"Fantastic".*

Other Interesting Contributions:

An investigation of the theory of rise and decline of cultures spanning four decades led to the prediction in the early nineties that the rise of China and India was imminent. Prof. Deshpande's recent book, "A Small Step for Man: Zero to Infinity with Six Sigma", offers fascinating insights into achieving global competitiveness with six sigma, improving health with Pranayam, and making sense out of the continuing violence resulting from intolerance and sheds light on interfaith understanding, racial harmony, and global peace. Prof. Deshpande enlisted a group of about 20 professionals including doctors, professors, engineers, and company executives in Louisville to ascertain the health benefits of Pranayam breathing exercises using six sigma principles. The results are promising.

- Prof. Deshpande has contributed to developing stronger US-India Ties: Here is a sampling of contributions:

- I. Served as a visiting professor at two of India's most prestigious educational institutions (Indian Institutes of Technology). Also served as Dr. G. P. Kane Visiting Professor, University of Bombay.
- II. Established ties between the National Chemical Laboratory, Pune, India, and Speed Scientific School, University of Louisville. Several visits from each side have materialized. Published numerous papers and a textbook.
- III. Conducted numerous intensive short courses in advanced process control for engineers in Indian industries including refineries, EIL, L & T, IPCL, NOCIL, and others.
- IV. Served as an UNDP (United Nations Development Program) consultant in India.
- V. Participated as a member (only one from Kentucky) of a high-level delegation for meetings with the Prime Minister, the Late Mr. Rajiv Gandhi and Government of India officials. About twenty delegates from top industrial and academic organizations in the United States participated in the meetings. The writer's recommendations on improving quality, productivity, and competitiveness of Indian process industries were recorded in the position paper. The writer's suggestion to Mr. Rajiv Gandhi that NRIs (non resident Indians) be given long term visa was accepted and implemented by the Government of India.
- VI. Initiated the Pune-Ville project to establish academic, cultural, and joint business interactions between the cities of Louisville and Pune. A copy of the proposal is enclosed. Initially, progress was slow for two reasons: (1) Kentucky industries were not convinced about the scope of opportunities in India, (2) It understandably took time for Indian industries to get accustomed to the new rules of the game of global free enterprise. Progress appears to be picking up. The following are the accomplishments of the Pune-ville project to date.
 - Dr. B.R. Sabade, Secretary General, Maharashtra Chamber of Commerce and Industries, Pune, Maharashtra State, visited Louisville. He presented a seminar outlining the types of industries operating in Pune and was given a key to the City of Louisville by the Offices of the Mayor and the County Judge Executive.
 - Dean Robert Taylor, Dean of the School of Business and Public Administration, University of Louisville, presented lectures on Leadership Development at Pune.
 - Dr. Yash Gupta, now Dean of the School of Business, University of Washington at Seattle, presented lectures on Total Quality Management at Pune.
 - Dr. Babu Nahata, Professor and former chair of the Economics Department, University of Louisville, presented lectures on Conducting International Business at Pune.Mrs. Ranju Kayarker, faculty member, Maharashtra State Institute for Catering Technology, Pune, conducted workshops on Indian cuisine at Louisville, Kentucky.
 - Dr. Suhas Bhawalakar of the Bhawalakar Research Institute, Pune, conducted a seminar on Vermiculture for converting biodegradable waste into fertilizer.
- VII. Served as a member of the Advisory Board of the Office of Economic Development, Commonwealth of Kentucky, to expand Kentucky-Maharashtra business interactions. One visit of a delegation of business and Government leaders from each side has taken place to date. Joint business activities have materialized.
- VIII. Co-organized NSF sponsored U.S.-India Conference on Chemical Engineering Education for the Future. Twenty world-renowned educators and industry leaders from the U.S. side participated in the conference.

Six Sigma Programs & Presentations of Prof. Deshpande

1. Central R & D Department, Du Pont Company, Wilmington, DE (Client)
2. ASQ/AIChE Joint Session, Chicago Chapter
3. Kuwait Society for Advancement in Science
4. Kuwait University
5. University of Arkansas
6. Georgia Institute of Technology
7. Department of Management, University of Pune, India
8. Center for Development in Advanced Computing (CDAC), Pune, India
9. Bowling Green, KY Section of ASQ
10. Brandywine Valley Section of AIChE
11. AIChE Intensive Training Program
12. Austin, Texas Section of AIChE/ISA
13. University of Kentucky, Gatton College of Business & Economics (Client)
14. University of Louisville (Client)
15. Metro Louisville Section of AIChE and ISA
16. University of Trujillo, Peru
17. C & MD and Senior Management of Kuwait Petroleum Corp.
18. Late Hon. P. V. Narasimha Rao, Prime Minister of India
19. Dr. R. Chidambaram, former Principal Scientific Adviser to the Prime Minister of India
20. Dr. Vijay L. Kelkar, Former Senior Adviser to Former Finance Minister Jaswant Singh
21. Dr. Ashok Desai. Former Adviser to former Finance Minister Man Mohan Singh
22. Mr. Subir Raha, C&MD and Members of the Board, ONGC
23. Mr. A. M. Nayak, C&MD and Members of the Board, L&T
24. Mr. Mahesh Lal, C&MD and Members of the Board, HPCL (Client)
25. Mr. Behuria, C&MD and Members of the Board, IOC
26. National Productivity Council, Ministry of Industry, Government of India
27. MD and Senior Management, National Stock Exchange
28. Director, Faculty, students, National Power Training Institute
29. BVQI, Mumbai
30. World Trade Center Conference, Office of Economic Development, Louisville KY
31. Bharti Telecom Ventures, Ltd., New Delhi, India
32. FICCI, Mumbai Chapter
33. Mr. C. Sunderajan, C&MD, Members of the Board BPCL
34. Mr. Mukesh Ambani, C&MD, and Senior Management, Reliance Industries, Ltd.
35. Mr. Kanetkar, C&MD, Kenna Metals, Bangalore
36. Infosys, Persistent Software, and Kanbay all in Pune
37. Indo-US Conference on Chemical Engineering in a Global Environment, Mumbai, Dec. 30, 2004.
38. MD and Members of Senior Management of Tata Chemicals, Ltd.
39. C&MD and Senior Management, Bharat Forge, Ltd., Pune.
40. Symbiosis Center for Management and Human Resource Development, Pune, India (Client)
41. Sadhana Center for Management and Leadership Development, Pune (Client)
42. Sinhagad Institute of Management and Computer Applications, Pune
43. Tata Motors, Pune (Client)
44. SECAT, Inc., Lexington, KY (Client)
45. Maharashtra Academy of Sciences and NCL Alumni Association, Pune.
46. Business First-sponsored Six Sigma Program for Senior Management
47. International Conference of Reliability Plant Engineers in Louisville, KY
48. Mercer, Inc. Senior Management (Client)
49. A Unit of US Department of Defense (Client)
50. Kuwait Ministry for Higher Education (Client)
51. Universidad del Pacifico

Biographical Sketch of Pradeep B. Deshpande

Pradeep B. Deshpande is Professor Emeritus in and a former Chair of the Department of Chemical Engineering at the University of Louisville. He is also a Visiting Professor of Management, Gatton College of Business & Economics, University of Kentucky and founder President and Chief Executive Officer of Louisville-based Six Sigma and Advanced Controls, Inc. (SAC). SAC specializes in six sigma and advanced control training and project executions for manufacturing industries and service companies.

SAC also offers software products for monitoring and optimization of batch and continuous processes. Among SAC's past and present clients are US Department of Defense, Ministry of Higher Education, State of Kuwait, Du Pont, Du Pont-Dow, Colgate-Palmolive, Frito Lay, Pidilite Industries, Ltd., Kuwait University, Providian Bancorp, Zeon Chemicals, and Oil & Natural Gas Corporation, Ltd., University of Kentucky, several B-Schools in Pune, India, among others.

SAC has made pioneering contributions to six sigma by deciphering what makes six sigma possible in the fundamental sense based on natural laws and by extending its applicability to dynamic systems. With these enhancements, it becomes possible to apply six sigma to *any* work process whether manufacturing or transactional, static or dynamic, linear or nonlinear, continuous, batch, or discrete parts-manufacturing.

Professor Deshpande has been the sole Leader of AIChE's training program, "**Six Sigma for Global Competitiveness**". Under a license from SAC, Prof. Deshpande introduced a three-credit advanced level course in Six Sigma at the University of Louisville, believed to be the first University in the world to do so. This course is being offered for the sixth time in the Fall 2007 Semester and the class is oversubscribed. Evaluations of the participants in all our training programs have been outstanding. Prof. Deshpande was also contracted to introduce a mandatory six sigma training program for MBA students at the University Kentucky Gatton College of Business & Economics. Pradeep has over thirty years of academic and full-time industrial experience and is perhaps the only educator in the world with internationally recognized expertise in six sigma.

Dr. Deshpande is an author or coauthor of six textbooks in process control related areas and has over 100 refereed technical papers and presentations to his credit. Professor Deshpande has supervised twenty Ph. D. Graduates and over fifty Master's graduates during his thirty years on the faculty at the University of Louisville. He consults for major companies in several countries and has done collaborative research with several of them. He has conducted many training programs in Asia, Middle East, Latin America, Europe, and the United States and has organized many joint activities in India, Kuwait, and Abu Dhabi. Partnering with a well-known B School in Pune, Prof. Deshpande recently established **SCMHRD-SAC, USA Six Sigma Excellence Awards** for corporate India, the first of its kind in the world.

Dr. Deshpande is a recipient of numerous awards for teaching, research, and professional excellence, including ISA's Donald P. Eckman Award in Process Control Education. Dr. Deshpande is a Fellow of ISA, is listed in the Who's Who in the World, and has taught at IIT Kanpur, IIT Madras, and UDCT, all in India.