

VINCENT GASPERSZ

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Lean Expert and Six Sigma Master Black Belt

A lean expert and six sigma master black belt (Lean Six Sigma Master Black Belt) with more than thirty years of experiences (Since 1991), I have guided organizational teams in identifying problems in the enterprise, determined the appropriate lean six sigma quality management methods to solve company problems, prepared material and conducted lean six sigma management training in order to improve productivity and quality of the companies.

EDUCATION

EDUCATION

Academic Education

- Insinyur Peternakan (Ir) Universitas Nusa Cendana, Februari 1980.
- Master of Science (M.Sc) in Applied Statistics, September 1983 – August 1985, IPB University (Bogor Agricultural University), Indonesia (GPA = 3.49 out of 4.0).
- Doctorate (Dr.) in Industrial Engineering and Management, August 1988 - September 1991, Institute of Technology Bandung (ITB), Indonesia (GPA = 4.0 out of 4.0)
- Doctor of Science (D.Sc) in Management of Engineering and Technology, January 1998 - December 2000, Southern California University for Professional Studies, USA (GPA = 4.0 out of 4.0)
- Professor of the Operations and Total Quality Management, Post Graduate Program, University of Trisakti, Jakarta, Indonesia, July 2002

Professional Education and Training

- Asean Engineer Register (Asean Eng), AFEO, 2018
- Insinyur Profesional Utama (IPU), Badan Kejuruan Teknik Industri (BKTI), PII, 2018 - 2023
- Certified Assesor of BNSP (Badan Nasional Sertifikasi Profesi), 2022 – 2025.
- APICS (www.apics.org) Certified Supply Chain Professional (CSCP), issued in June 2008 and have achieved Lifetime Certification.
- APICS (www.apics.org) Certified Supply Chain Professional Fellow (CSCP-F), issued in Feb 2018 and have achieved Lifetime Certification.
- APICS (www.apics.org) Certified in Production and Inventory Management (CPIM), issued in April 1996 and have achieved Lifetime Certification..
- APICS (www.apics.org) Certified in Production and Inventory Management Fellow (CPIM-F), issued in April 1998 and have achieved Lifetime Certification.
- IASSC (<https://iassc.org/six-sigma-certification/black-belt-certification/>) **.Certified Lean SixSigma Black Belt, 2021 - 2024.**
- ASQ (www.asq.org) Certified Manager of Quality/Organizational Excellence (CMQ/OE), issued in March 2006 and maintained until June 30, 2024 (maintained every three years period)

- ASQ (www.asq.org) Certified Six Sigma Black Belt (CSSBB), issued in October 2006 and maintained until June 30, 2024 (maintained every three years period)
- ASQ (www.asq.org) Certified Quality Engineer (CQE), issued in June 2006 and maintained until June 30, 2024 (maintained every three years period)
- ASQ (www.asq.org) Certified Quality Auditor (CQA), issued in December 2006 and maintained until June 30, 2024 (maintained every three years period)
- ASQ (www.asq.org) Certified Quality Improvement Associate (CQIA), issued in December 2016 (No need to maintain)
- IQF (International Quality Federation, www.iqf.org) Six Sigma Master Black Belt Certification, issued in August 2005 (No need to maintain)
- Exemplar Global (Part of American Society for Quality) Certified Management System Lead Specialist (CMSLS), issued in April 2017 and expires on 28 September 2023..
- Certificate of Completion on Theory of Constraint (ToC) and Throughput Accounting (TA) training, 3 – 4 February 2016, Issued by Intellectual Capital Resources Institute (I-Care), Jakarta, Indonesia.
- Certificate of Achievement in Six Sigma Course, The McGraw-Hill 35-Hour Six Sigma Course, Issued by McGraw-Hill Professional on 7 September 2007
- Certificate of Completion in Six Sigma Black Belt course (13.0 ASQ Recertification Units), January – June 2004, Issued by MoreSteam University, USA on 3 June 2004.
- Certificate of Completion in Internal Auditors of Quality Systems Training, 20-21 September 1994, Issued by NOVO Quality Services, Singapore.
- Certificate of Attendance in Documentation and Implementation of ISO 9000 Quality System, 6 – 7 September 1994, Issued by NOVO Quality Services, Singapore.
- Certificate of Attendance in Technical Report Writing course, 20 – 22 July 1994, Issued by PT Metri Prana Utama, Jakarta, Indonesia.
- Certified Trainer in Situational Leadership: Leveraging Human Performance, 5-day training (27 January – 31 January 1992), The Centre of Leadership Studies, Australia

Professional Membership

- Fellow Member of ASCM (Association for Supply Chain Management), USA, Member No. : 1023620..
- Senior Member of ASQ (American Society for Quality), USA, Member No.: 00749775.
- Member of Exemplar Global—Part of ASQ, Australasia, Member No. 105054.
- Senior Member of IISE (Institute of Industrial and System Engineers), USA, Member No. 880194630.
- Member of The Institution of Engineers Indonesia, Indonesia, Member No. 1022.21.034330.

CAREER HISTORY

Work Experience as a Consultant

- January 2005 to June 2020, “More than 15 years’ experience as a Lean Six Sigma Master Black Belt and Principal Consultant in Vinchrsto Bros, Bogor, Indonesia”. Guided organizational teams in identifying problems in the enterprise, determined the appropriate lean and six sigma quality management methods to solve company problems, prepared material and conducted lean six sigma management training in order to improve productivity and quality of the companies.

Job responsibilities of the Lean Six Sigma Master Black Belt are:

1. Design and develop Lean Six Sigma training and delivery.
 2. Develop Lean Six Sigma consulting methods and ensure the appropriate methodology design and deployment of Lean events, including Six Sigma DMAIC projects.
 3. Apply program management techniques to ensure the on-time, high-quality delivery of products.
 4. Develop and manage key client relationships. Manage projects and ensure their compliance. Generate new client opportunities, work with senior management to develop and deliver against account plans, and maintain responsibility for staff development.
 5. Others as needed by the clients.
- 1 April 2015 to 24 August 2017. “More than 2 years’ experience as a Trainer and Consultant in OT (Orang Tua) Group of Companies, Jakarta, Indonesia”. I represented Vinchristo Bros.

The Job responsibilities have been completed were:

1. Designed and implemented OT (Orang Tua) Way of Supply Chain Management System using Hoshin Kanri Strategy and Development Plan.
 2. Designed and implemented JIPM Total Productivity Manufacturing (TPM) in PT. Ultra Prima Abadi factories.
 3. Developed and delivered TPM training materials to the managers and supervisors related to the modules: TOPS (Team Oriented Problem Solving), Autonomous Maintenance (AM) and Planned Maintenance (PM), Integrated Management System of ISO 9001, ISO 22000, ISO 14001, and ISO 45001, Internal Audit of JIPM Total Productivity Management (TPM), Risk Management of ISO 31000.
 4. Designed and delivered Quality Improvement Programs to Production Department in the factories.
- 25 February 2012 to 20 April 2012. “2 months’ experience as an Instructor and Consultant in PT. Pertamina EP-UBEB Limau, Prabumulih, South Sumatera, Indonesia”. I represented Vinchristo Bros.

The job responsibilities have been completed were:

1. Developed and delivered Pertamina Quality Award based on Malcolm Baldrige Criteria for Performance Excellence (MBCfPE) training materials to the managers in order to improve their competency.
2. Designed “Kriteria Kinerja Ekselen Pertamina (KKEP)” based on 2012 Malcolm Baldrige Criteria Award in order to use as a guidance to audit “Pertamina Quality Award (PQA)”.
3. Guided the managers to write the Pertamina Quality Award (PQA) based on 2012 Malcolm Baldrige Criteria Award.

- 1 June 2008 – 31 Mei 2010. “2 years’ experience as a Consultant/Team Leader of Organizational Excellence Program in PT. Ultra Prima Abadi”, Indonesia. Irepresented Vinchristo Bros.

The main projects have been completed were:

1. Developed and delivered the training modules on the subject of: “Team Oriented Problem Solving (TOPS), Lean Kaizen Manufacturing , and Quality Control Circles”.
 2. Developed, implemented, monitored and improved “Overall Equipment Effectiveness (OEE)” in the 12 Strategic Business Units.
 3. Developed, implemented, and integrated Manufacturing, Marketing, Finance/Accounting and HRD Teams to monitor and Improve the Integrated Key Performance Indicators of the Corporate/Strategic Business Units’ Master Improvement Story.
 4. Developed, implemented, monitored, and conducted “Quality Control Circles Convention” in the four factories.
- May 2007 to December 2007. “8 months’ experience as an Instructor and Consultant in PT. Trisakti Purwosari Makmur, Pasuruan, East Java, Indonesia”.

The main projects have been completed were:

1. Implemented Six Sigma and Quality Control Circles (QCC) Projects.
 2. Developed and Implemented Statistical Process Control (SPC).
 3. Developed and Implemented Balanced Scorecard (BSC) and Business Plan.
 4. Developed and Implemented Weekly Managerial Accounting Report (Sales, Cost of Goods Sold, and Profit Before Taxes).
- 1 October 2003 to 21 May 2004. “Eight months’ experience as a Lean Manufacturing Leader in Garibaldi Glass Industries, Inc., Vancouver, Canada”.

The main projects have been completed were:

1. Developed ISO 9001:2000 Quality Manual and Mandatory Procedures.
2. Developed ABC Product Costing.
3. Developed Garibaldi Basic Lean Foundation and Passed BC Consortium for Manufacturing Excellence Assessment (L.E.A.N Score = 2.2). The passing grade was 2.0.
4. Developed Training Modules: 6S, Basic Lean Philosophy, Kaizen Blitz, Value Stream Mapping, and ISO 9001:2000.

- 1 September 1999 to 31 October 2001. “26 months’ experience as a Facilitator/Consultant/TQM Leader in Citra Serayu Mas Company (Furniture and Wood Working Industries), Purwokerto, Central Java, Indonesia:.

The main projects have been completed were:

1. Designed business process flow and implemented lean six sigma principles to production department in the Furniture and Wood Working factories.
2. Designed and Implemented 5S program to the all departments in the Furniture and Wood Working factories.
3. Designed and delivered TQM training materials to the all managers and supervisors in the Furniture and Wood Working factories.
4. Designed and Implemented Quality Improvement Program (QIP) to production departments in the Furniture and Wood Working factories.
5. Developed, implemented, and integrated manufacturing, marketing, finance/accounting and HRD teams to monitor and improve the integrated key performance indicators in the Company’s Master Improvement Story.
6. Developed, implemented, and monitored Weekly Manufacturing Cost Reduction Report in the Furniture and Wood Working factories.

- 1 April 1992 to 31 May 1996. “ More than 4 years’ experience as a Trainer and Consultant to Corporate Recruitment and Training in PT Gajah Tunggal Group of Companies, Jakarta, Indonesia”.

The job responsibilities were:

1. Conducted training to supervisors and managers on Integrated Manufacturing, Finance Information System, and ISO 9000 Program for the manufacturing division in the Gajah Tunggal Group of Companies.
2. Gave consultancy to supervisors and managers in order to improve efficiency and quality of the companies.

Work Experience as a Professor

- 1 April 1993 to 31 March 2003. “ 10 years’ experience as a Professor in Post Graduate Program of the University of Trisakti, Jakarta, Indonesia”. Instructed Total Quality Management (TQM), Production and Inventory Management (POM), and Managerial Economics courses.

Job responsibilities were:

1. To provide the lecture in postgraduate program.
2. To provide the total quality and manufacturing management training and consultation for industrial companies.

3. To supervise and guide candidates of the Master of Management (MM) in Production and Quality Management field.

Work Experience as an Instructor

1. Provided Lectures on Management Information System and Developing Key Performance Indicators for the Duration of 20 hours in Master of Management Program, Post Graduate School, Catholic University of Widya Mandira, Kupang, East Nusa Tenggara, Indonesia, June 2, 4, 8, 9, and 10, 2020.
2. Provided Lean Six Sigma Yellow Belt Training to Vinchristo Bros, Bogor, West Java, Indonesia, 4 – 8 March 2019
3. Provided Lean Six Sigma Yellow Belt Training to Vinchristo Bros, Bogor, West Java, Indonesia, 10 – 14 June 2019
4. Provided Lean Six Sigma Green Belt Training to Vinchristo Bros, Bogor, West Java, Indonesia, 26 – 30 August 2019
5. Provided Lean Six Sigma Black Belt Training to Vinchristo Bros, Bogor, West Java, Indonesia, 4 – 29 November 2019
6. Provided 2-day Workshop on How to Link Education and Industry in Higher Education, University of Timor, East Nusa Tenggara, Indonesia, 3-4 April 2018.
7. Provided Quality Management System in 2-day Workshop, BKTII PII< Jakarta, Indonesia, 27 – 28 November 2017.
8. Provided Lean Six Sigma Supply Chain Management in 1-day Workshop, IPB University (Bogor Agricultural University), Bogor, West Java, Indonesia, 25 November 2017.
9. Provided Marketing Strategy course (36 hours, 3 credits) in the Master of Management Program, Post Graduate School, Catholic University of Widya Mandira, Kupang, East Nusa Tenggara, in February to June 2017.
10. Provided Total Productive Maintenance/Manufacturing/Management (TPM) in 1-day Workshop-Led Implementation to PT. Ultra Prima Abadi, OT Group of Companies, Jakarta, Indonesia, 12 April 2017.
11. Provided OT (Orang Tua) Way of Management (Integrated Management System) in One-day Educational Plant Tour and Workshop, PT. Ultra Prima Abadi, Surabaya, East Java, 31 March 2017.
12. Provided Total Productive Maintenance/Manufacturing/Management (TPM) in 4-hour Workshop-Led Implementation to PT. Ultra Prima Abadi, OT Group of Companies, Surabaya, East Java, Indonesia, 30 March 2017
13. Provided Total Productive Maintenance/Manufacturing/Management (TPM) in 4-hour Workshop-Led Implementation to PT. Ultra Prima Abadi, OT Group of Companies, Karawang, West Java, Indonesia, 19 March 2017
14. Provided Total Productive Maintenance/Manufacturing/Management (TPM) in 4-hour Workshop-Led Implementation to PT. Ultra Prima Abadi, OT Group of Companies, Tangerang, Banten, Indonesia, 17 March 2017
15. Provided Total Productive Maintenance/Manufacturing/Management (TPM) on 1-day Workshop-Led Implementation, PT. Ultra Prima Abadi, OT Group of Companies, Jakarta, Indonesia, 15 March 2017.
16. Provided Total Productive Maintenance/Manufacturing/Management (TPM) in 4-hour Workshop, PT. Ultra Prima Abadi, OT Group of Companies, Jakarta, Indonesia, 13 March 2017.

17. Provided OT (Orang Tua) Way of Management (Integrated Management System) in One-day Educational Plant Tour and Workshop, PT. Ultra Prima Abadi, Surabaya, East Java, Indonesia, 24 February 2017.
18. Provided OT (Orang Tua) Way: PDCA and SDCA in 4-hour Seminar, Intellectual Capital Resource Institute & HR Holding, OT Group of Companies, Jakarta, Indonesia, 29 November 2016.
19. Provided Performance Improvement in 2-day In-house Training, PT. Arta Boga Cemerlang, Jakarta, Indonesia, 7 – 8 April 2016.
20. Provided Managing Sales Team in 2-day In-house Training, PT. Arta Boga Cemerlang, Jakarta, Indonesia, 7 – 8 October 2015.
21. Provided Business Performance Improvement Strategy in 2-day In-house Training, PT. Ultra Prima Abadi, Jakarta, Indonesia, 6 – 7 August 2015.
22. Provided Total Quality Management (TQM) in 3-day In-house Training, PT. Indonesia Asahan Aluminium (Inalum), Asahan, North Sumatera, Indonesia, 16 – 18 January 2012.
23. Provided Lean Total Productive Management (Lean TPM) in 2-day Public Workshop, Kontan, Kompas Gramedia, Jakarta, Indonesia, 28 – 29 November 2011.
24. Provided Business Process Excellence in 2-day Public Workshop, Kontan, Kompas Gramedia, Jakarta, Indonesia, 22 – 23 September 2011
25. Provided Lean Six Sigma Supply Chain Management to Kontan, Kompas Gramedia, Jakarta for 2-day Public Workshop, Jakarta, Indonesia, 25 – 26 July 2011.
26. Provided PLN Integrated Management System in 2-day In-house Training, PT. PLN Corporate, Jakarta, Indonesia, 21 – 22 December 2010.
27. Provided Lean Kaizen Manufacturing in 3-day In-house Training, OT Group of Companies (12 Strategic Business Units), Jakarta, Indonesia, 28 - 30 September 2009.
28. Provided Lean Kaizen Manufacturing in 3-day In-house Training, OT Group of Companies (12 Strategic Business Units), Jakarta, Indonesia, 21 - 23 September 2009
29. Provided Lean Kaizen Manufacturing in 3-day In-house Training, OT Group of Companies (12 Strategic Business Units), Jakarta, Indonesia, 14 – 16 September 2009.
30. Provided Quality Control Circle (QCC) in 2-day Workshop, OT Group of Companies (12 Strategic Business Units), Jakarta, Indonesia, 19 - 20 August 2009.
31. Provided Quality Control Circle (QCC) in 2-day Workshop, OT Group of Companies (12 Strategic Business Units), Jakarta, Indonesia, 10 - 12 August 2009
32. Provided Quality Control Circle (QCC) in 2-day Workshop, OT Group of Companies (12 Strategic Business Units), Jakarta, Indonesia, 3 – 4 August 2009.
33. Provided Team Oriented Problem Solving (TOPS) in 3-day Workshop, OT Group of Companies (12 Strategic Business Units), Jakarta, Indonesia, 22 – 24 June 2009.
34. Provided Team Oriented Problem Solving (TOPS) in 3-day Workshop, OT Group of Companies (12 Strategic Business Units), Jakarta, Indonesia, 15 - 17 June 2009.
35. Provided Team Oriented Problem Solving (TOPS) in 3-day Workshop, OT Group of Companies (12 Strategic Business Units), Jakarta, Indonesia, 8 – 10 June 2009.
36. Provided Eterindo Six Sigma Winners Convention, Eterindo Group of Companies, Jakarta, Indonesia, 4 January 2008.
37. Provided Six Sigma Green Belt in 5-day Six Sigma In-house Training, PT Multi Bintang Indonesia Tbk, Mojokerto, East Java, Indonesia, 6 – 10 Agustus 2007.
38. Provided Total Quality Management course (36 hours, 3 credits) in the Master of

- Management Program, Post Graduate School, University of Trisakti, Jakarta, Indonesia, 19 April – 19 July 2007.
39. Provided Six Sigma Champion in 2-day Workshop PT Bakrie & Brothers, Tbk, Jakarta, Indonesia, 16 - 17 July 2007
 40. Provided Six Sigma Awareness in In-house Training PT Bakrie & Brothers, Tbk, Jakarta, Indonesia, 10 July 2007.
 41. Provided Lean Six Sigma in 5-day Workshop, PT. Trisakti Purwosari Makmur, Pasuruan, 7 – 11 May 2007.
 42. Provided Integrated Performance Management – Balanced Scorecard in 3-day Workshop, PT. Trisakti Purwosari Makmur, Pasuruan, East Java, Indonesia, 3 – 5 April 2007.
 43. Provided Lean Six Sigma for Champion and Top Management in In-house Training, PT Trisco, Bandung, West Java, Indonesia, 19 May and 26 May 2007.
 44. Provided Malcolm Baldrige Criteria for Performance Excellence (MBCfPE) in In-house Training, PT Krakatau Bandar Samudera, Cilegon, Banten, 20 February 2007.
 45. Provided Total Quality Management course (36 hours, 3 credits) in the Master of Management Program, Post Graduate School, University of Trisakti, Jakarta, Indonesia, 19 April – 19 July 2006.
 46. Provided Six Sigma in TQM and Business Excellence Seminar, Swiss German University, Serpong, Banten, Indonesia, 27 May 2006.
 47. Provided ASQ-Certified Manager of Quality/Organizational Excellence in 5-day Workshop, PT. Inti Karya Persada Teknik (IKPT), Jakarta, Indonesia, 16-21 December 2005.
 48. Provided Lean Six Sigma Manufacturing System in IPOMS Seminar, Bogor, West Java, Indonesia, 1 October 2005.
 49. Provided Introduction to Materials Management in IPOMS Workshop, Bogor, West Java, Indonesia, 3 September 2005.
 50. Provided Just in Time (JIT) and Total Quality Management (TQM) in IPOMS Workshop, Bogor, West Java, 20 August 2005.
 51. Provided Physical Inventory and Warehouse Management in IPOMS Workshop, Bogor, West Java, Indonesia, 13 August 2005.
 52. Provided Introduction to Materials Management in IPOMS Workshop, Bogor, West Java, 9 July 2005.
 53. Provided Master Scheduling dalam IPOMS Workshop, Bogor, West Java, Indonesia, 11 June 2005.
 54. Provided Implementing Total Lean Enterprise Systems in the Manufacturing Company in 3-day Workshop, PT. Showa Indonesia Manufacturing, Cikarang, West Java, Indonesia, 4 – 6 February 2005.
 55. Provided Operations Management in Human Resource Management Workshop, PT Pertamina, Jakarta, Indonesia, 31 January 2003.
 56. Provided Total Productivity Improvement in 5-day Workshop, PT. Pertamina, Jakarta, Indonesia, 23 – 27 September 2002.
 57. Provided Balanced Scorecard (BSC) in 5-day Workshop, PT. Pertamina, Jakarta, Indonesia, 27 – 31 May 2002.
 58. Provided Technology Assessment Workshop, PT Pertamina, Jakarta, Indonesia, 22 March 2002.
 59. Provided Technology Assessment Workshop, PT Pertamina, Jakarta, Indonesia, 19 March

2002.

60. Provided Manufacturing Management Audit, Time Study, and Production Planning and Inventory Control (PPIC) in 3-Month Manufacturing Improvement Program, PT. Nayati Indonesia, Semarang, July – September 2002.
61. Provided ISO 9001:2000 and Malcolm Baldrige National Quality Award (MBNQA) 2002 in In-house Training PT. Telekomunikasi Indonesia, Denpasar, Indonesia, 16 April 2002.
62. Provided ISO 9001:2000 and Malcolm Baldrige National Quality Award (MBNQA) 2002 in In-house Training PT. Telekomunikasi Indonesia, Balikpapan, East Kalimantan, Indonesia, 1 April 2002.
63. Provided ISO 9001:2000 and Malcolm Baldrige National Quality Award (MBNQA) 2002 in In-house Training PT. Telekomunikasi Indonesia, Semarang, Central Java, 25 March 2002.
64. Provided ISO 9001:2000 and Malcolm Baldrige National Quality Award (MBNQA) 2002 in In-house Training PT. Telekomunikasi Indonesia, Bandung, West Java, Indonesia, 21 March 2002.
65. Provided Production Planning and Inventory Control (PPIC) in In-house Training PT. Konimex, Solo, West Java, 18 – 20 July 2001.
66. Provided TQM and ISO 9001:2000 in In-house Training, PLN Bogor Training Center, Bogor, West Java, Indonesia, 25 – 29 June 2001.
67. Provided Continuous Quality Improvement (QCI) to 30 Managers and Supervisors in Citra Serayu Mas, Purwokerto, Central Java, Indonesia, 11-15 December 2000.
68. Provided Six Sigma for Performance Measurement in 1-day Workshop, PT Astra International Tbk, Jakarta, Indonesia, 14 December 2000.
69. Provided Production Planning and Inventory Control (PPIC) in In-house Training PT. Ulam Tiba Halim, Semarang, Central Java, Indonesia, 1 – 3 September 1999.
70. Provided Total Productivity Management in In-house Training, PT. Ulam Tiba Halim, Semarang, Central Java, Indonesia, 9 – 11 August 1999.
71. Provided Cost Reduction Program in In-house Training, PT. Ulam Tiba Halim, Semarang, Central Java, Indonesia, 15 – 17 July 1999.
72. Provided Quality Improvement Program (QIP) in In-house Training, PT. Ulam Tiba Halim, Semarang, Central Java, 9 – 16 June 1999.
73. Provided Total Quality Management (TQM) in In-house Training, PT. Kambing Rejeki, Semarang, Central Java, 29 – 31 March 1999.
74. Provided Total Productivity Management in 1-day Workshop, PT. Intinusa Rimbahari, Cipanas, West Java, Indonesia, 10 May 1998.

Specialized Areas of Expertise

- Manufacturing Resources Planning (MRP II) and Lean Six Sigma Principles
- Production and Operations Management
- Total Performance Management Systems
- Management Information System
- Balanced Scorecard and Malcolm Baldrige Criteria for Performance Excellence (MBCfPE)
- ISO 9001, ISO 14001, ISO 31000, OHSAS 18001/ISO 45001
- Total Quality Management/Total Productivity Management
- Statistical Process Control (SPC)/Failure Mode and Effect Analysis (FMEA)

- Design of Experiments and Statistical Analysis
- Lean Six Sigma Supply Chain Management Systems
- Total Profitability Systems and Management

Professional Affiliation

- Senior Member of American Society for Quality (Member #: 00749775), since 1994 until present
- International Member and Fellow of American Production and Inventory Control Society (Member #: 1023620), since 1995 until present
- Senior Member of Institute of Industrial and Systems Engineers (Member #: 880194630), since 2017 until present
- Member of the Six Sigma Forum—The American Society for Quality since 1998 until present
- Member of the International Quality Federation (IQF)—Six Sigma Master Black Belt, 2005
- Member of the RAB-QSA (Exemplar Global) since 2007 until present

Publications

I have published 48 text books in Bahasa Indonesia (Indonesian Language) and more than 100 training modules & papers/articles.

Experimental Design and Statistical Analysis, 1990	Applied Industrial System Analysis, 1992	Managerial Economics for Business Decision Making, 1996
Production Planning and Inventory Control, 1998	Statistical Process Control, 1998	VINCENT® Concept on Total Quality Management, 1998
Total Productivity Management, 1999	Total Quality Management, 2000	ISO 9001:2000 and Continual Quality Improvement, 2001
A guide to Develop the Business Plan, 2002	A guide to Implement Six Sigma Program—An Integrating of ISO 9001:2000, MBNQA, and HACCP, 2002	An Integrated Performance Management System of Balanced Scorecard with Six Sigma for Private and Public Organizations, 2002
Corporate Implications of the Lean Manufacturing Principles, APICS Vancouver Chapter, 2003	Quality Manual and Referenced Procedures of ISO 9001:2000, 2004	Quality Management for Service Industries, 2002
Lean Six Sigma for Manufacturing and Service Industries, 2007	Continuous Cost Reduction Through Lean-Sigma Approach, 2006	Organizational Excellence—Strategic Models toward World Class Quality Company, 2007

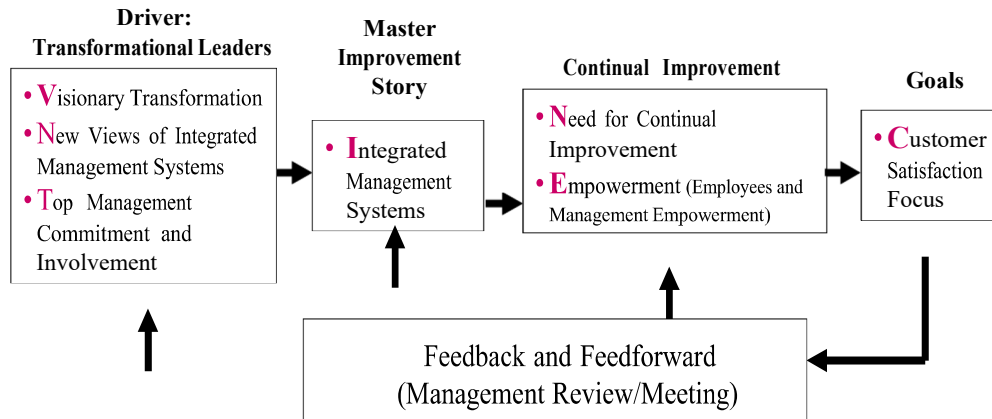
GE Way and Malcolm Baldrige Criteria for Performance Excellence (MBCfPE), 2007	TOPS-Team-Oriented Problem Solving, 2007	The Executive Guide to Implementing Lean Six Sigma, 2008
All-in-one® Talent Management, 2011	All-in-one® Strategic Management, 2011	All-in-one® Marketing Excellence, 2011
All-in-one® Finance for Non-financial Managers, 2011	Three-in-one® ISO 9001, ISO 14001 and OHSAS 18001, 2012	SUCCESS Character Building Through The Ultimate SUCCESS Strategy, 2012

VINCENT® Concept in Total Quality Management (TQM)

Based on my experiences, knowledge and skills in TQM and Lean Enterprise, I have formulated a quality concept called VINCENT® Concept in Total Quality Management. Basically VINCENT is an acronym of:

Visionary transformation,
Integrated management systems (Infrastructure—Master Improvement Story),
Need for continual improvement,
Customer satisfaction focus,
Empowerment (Employees and Management Empowerment),
New views of integrated management systems, and
Top management commitment and involvement.

The main objective of continuously improving customer satisfaction (Customer satisfaction focus) should be led by the transformational leaders that have new views of integrated management systems (New views of integrated management systems) and strong top management commitment & involvement (Top management commitment and involvement) in order to transform a company's vision (Visionary transformation) into daily best management practice. These drivers should be implemented by establishing an integrated management system including ISO 9001, ISO 14001, OHSAS 18001, the Baldrige Award Criteria, Balanced Scorecard, and Lean Six Sigma Supply Chain Management as the integrated management systems (Integrated management systems or Infrastructure—Master Improvement Story) for continual improvement (Need for continual improvement) and directed by the empowered- teams and management (Empowerment—employees and management empowerment).



VINCENT Concept:

Visionary Transformation (Transformasi Visi)

Integrated Management Systems (Sistem Manajemen Terintegrasi)

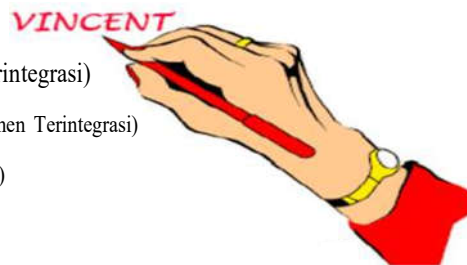
New Views of IMS (Pandangan Baru tentang Sistem Manajemen Terintegrasi)

Customer Satisfaction Focus (Fokus Kepuasan Pelanggan)

Empowerment (Pemberdayaan Manajemen dan Karyawan)

Need for Continual Improvement (Kebutuhan untuk Peningkatan Terus-Menerus)

Top Management Commitment and Involvement (Komitmen dan Keterlibatan Manajemen Puncak)



Yours truly,

Vincent Gaspersz

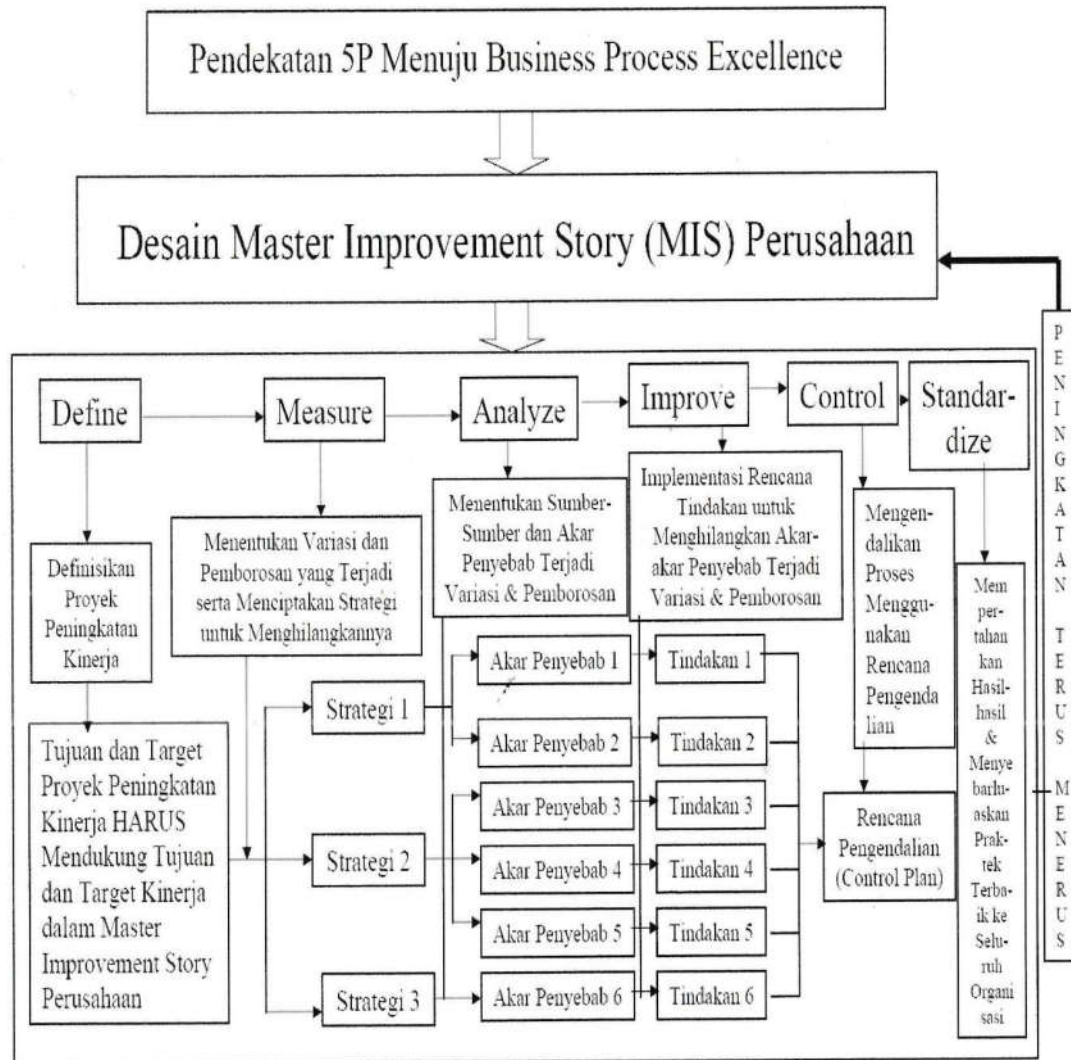
Vincent Gaspersz

Lean Six Sigma Master Black Belt

Approach of Lean Six Sigma Methodology (DMAICS)

I, Vincent Gaspersz, have published DMAICS (Define, Measure, Analyze, Improve, Control, and Standardize) methodology in Bahasa Indonesia (Indonesian Language) to help Indonesian companies in order to be world class organizations as shown below.

Continual Improvement in World Class Organization



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Notes:

1. 5P is an acronym of: People, Processes, Products (goods and/or services), Profitability, and Performance improvement.
2. MIS (Master Improvement Story) is like a Master Planning for 5-year period (long-term planning) that consists of vision/mission/values, and SMART goals (specific,

measurable using key performance indicators/KPIs, achievable through actionable, results oriented and relevant to strategic goals, time-bound/timely, evaluation/empowerment, and review/reward & recognition).

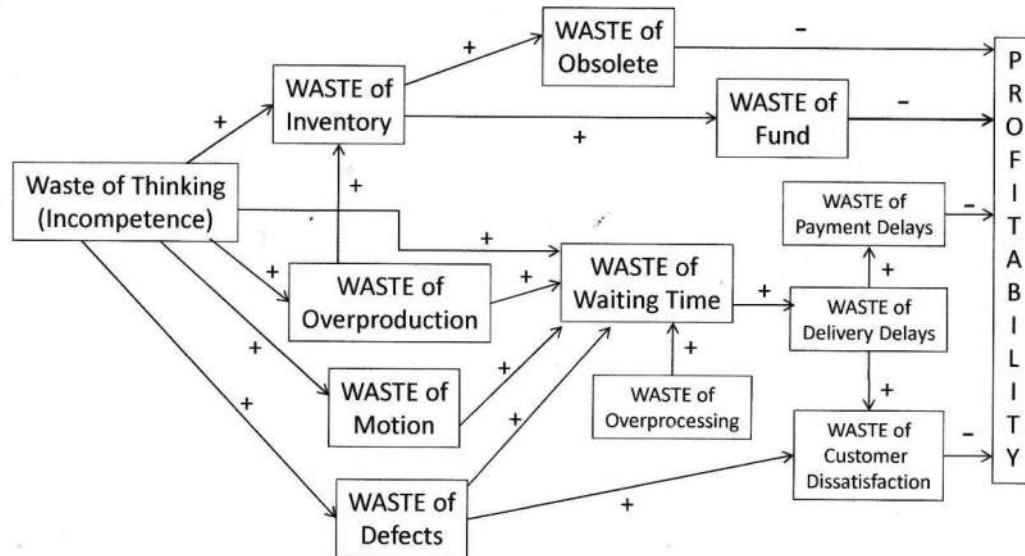
3. DMAICS is a methodology of Lean Six Sigma projects/programs that consists of:
- Define (D): to define the Performance improvement projects/programs, setting strategic objectives and targets in order to support MIS (Master Improvement Story) in point 2.
 - Measure (M): to identify and measure all types of waste (DOWNTIME waste: Defect, Overproduction, Waiting, Not utilizing people knowledge, skills, attitude, Transportation, Inventories, Motion, Excess processing/steps in processes) and processes capability in terms of sigma unit of measures, and followed by seeking the strategies to eliminate all DOWNTIME waste in supply chains from suppliers to customers (SIPOC—Suppliers, Inputs, Processes, Outputs, Customers) and improving processes capability in terms of sigma unit of measures.
 - Analyze (A): to analyze the sources of variations and wastes in order to know the root causes of problems, and followed by designing the appropriate action plan to eliminate all wastes and improving the processes' capability in terms of sigma unit of measures (uom).
 - Improve (I): to implement the appropriate action plan in order to eliminate the root causes of problems in supply chains from suppliers to customers (value chain of SIPOC—Suppliers, Inputs, Processes, Outputs, Customers) and improve processes' capability in terms of sigma unit of measures (uom).
 - Control (C): to control the processes using control plan (statistical processes control, etc.).
 - Standardize (S): to standardize the processes using standard operating procedures (SOPs), deploy all best practices throughout the organization, and go back full circle to the Define (D) step in DMAICS methodology.

Application of Lean Thinking in WASTE Mapping and its Relationship (Positive or Negative) to Company Profitability

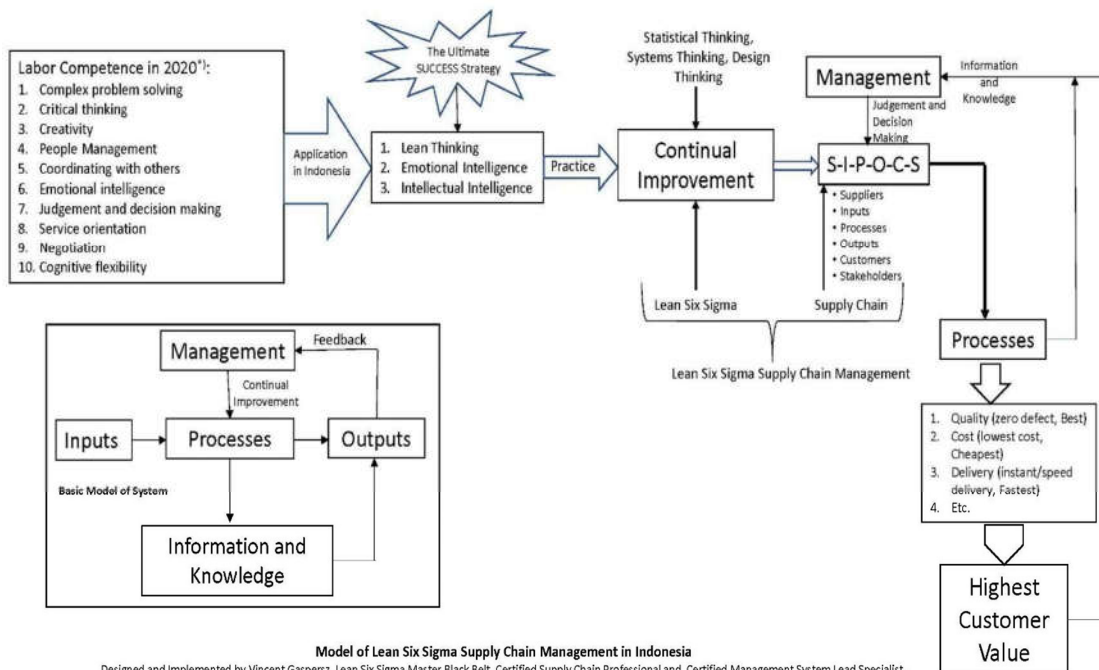
Vincent Gaspersz has conducted the WASTE mapping and its relationship to company profitability as shown in the following figure.

Application of Lean Six Sigma Supply Chain Management Concept in Indonesia

Vincent Gaspersz has published a framework of Lean Six Sigma Supply Chain Management in Indonesia in order Indonesian companies to achieve the world class organization as shown in the following figure.



Note: Effectiveness of Competence (EC) = Knowledge (K) x Skills (S) x Attitude (A)



Model of Lean Six Sigma Supply Chain Management in Indonesia

Designed and Implemented by Vincent Gaspersz, Lean Six Sigma Master Black Belt, Certified Supply Chain Professional and Certified Management System Lead Specialist.

^{*)} Labor Competence in 2020 based on the World Economic Forum, 2016 Report. The Future of Jobs: Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution—Top 10 Skills Important in the Workforce

Congratulations From APICS as a Fellow Member (CPIM-F: Certified in Production and Inventory Management Fellow and CSCP-F: Certified Supply Chain Professional Fellow).

CONGRATULATIONS

The elite group of candidates below earned their APICS Fellow designations between July 31, 2017, and July 30, 2018. Join us in thanking them for sharing their APICS passion and knowledge with others.

Hatem Abu Nusair, CPIM-F, CSCP-F

Ayman Assaad, CSCP-F, SCOR-P

Chris Barnes, CPIM-F, CSCP, CLTD-F

David Clark, CPIM-F, CSCP-F

William Cure, CPIM-F, CIRM, CSCP-F, CLTD-F

Jessica Flory, CPIM-F, CSCP-F, CLTD

Susan Franks, CPIM-F, CSCP-F, CLTD-F

Vincent Gaspersz, CPIM-F, CSCP-F

Ann Gatewood, CPIM-F, CIRM, CSCP-F, CLTD-F

Douglas Hales, CLTD-F, CTL

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VG



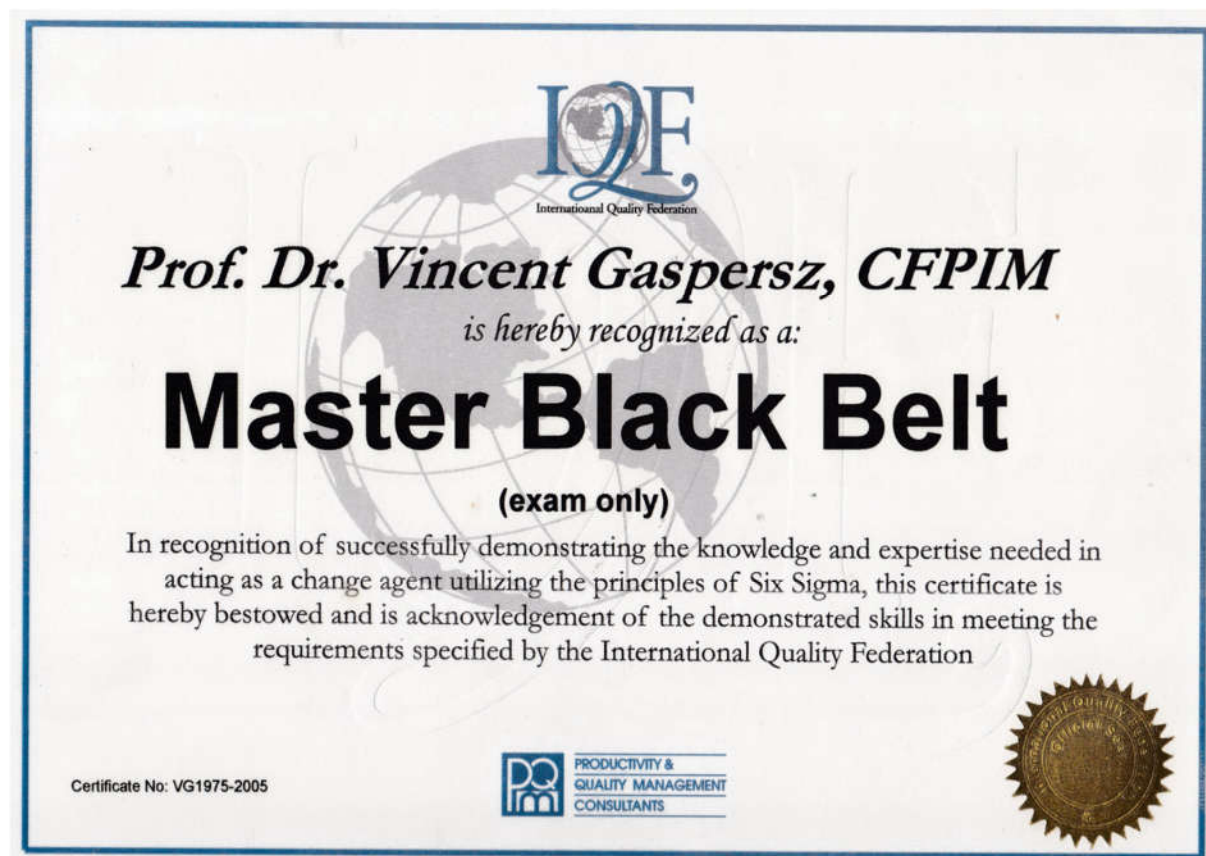
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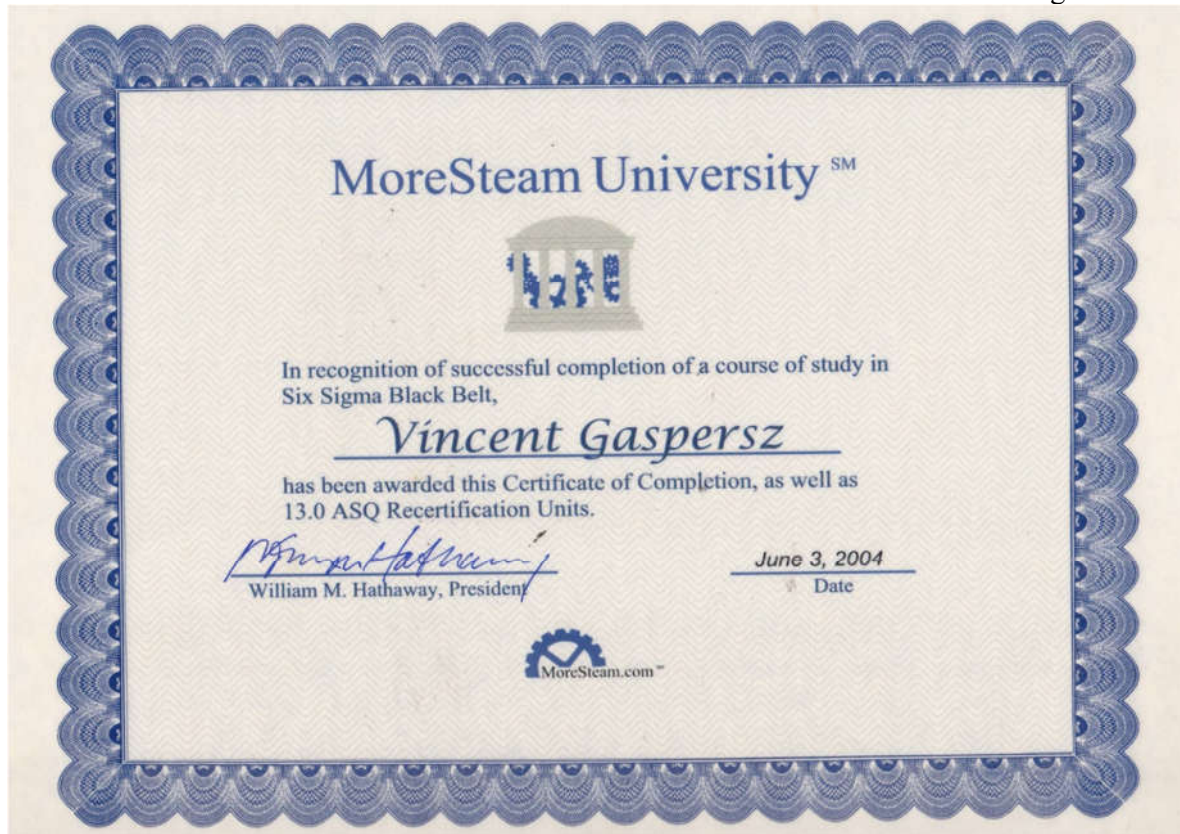
Are you eligible?

View the qualifications at apics.org/fellows and find out if you have what it takes to join this dedicated group of individuals.

Charter award as the best writer from the Minister of Education and Culture of the Republic of Indonesia, 1994







Vincent Gaspersz

has satisfactorily fulfilled the requirements established
by ASQE for professional attainment of the

CERTIFIED SIX SIGMA BLACK BELT

Date Issued: **October 21, 2006**

Expiration Date: **June 30, 2025**

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Certificate Number: 5057

Daniella Picciotti

Daniella Picciotti, ASQE Chair

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VERIFIED CERTIFICATE

Certificate Number: 10009

A handwritten signature in black ink, appearing to read "Daniella Picciotti".

Daniella Picciotti, ASQE Chair

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has satisfactorily fulfilled the requirements established
by ASQE for professional attainment of the

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Expiration Date: **June 30, 2025**



VERIFIED CERTIFICATE

Certificate Number: 49139

A handwritten signature in black ink, appearing to read "Daniella Picciotti".

Daniella Picciotti, ASQE Chair

Vincent Gaspersz

has satisfactorily fulfilled the requirements established
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CERTIFIED QUALITY AUDITOR

Date Issued: **December 2, 2006**

Expiration Date: **June 30, 2025**



VERIFIED CERTIFICATE

Certificate Number: 35478

A handwritten signature in black ink, reading "Daniella Picciotti".

Daniella Picciotti, ASQE Chair

Vincent Gaspersz

has satisfactorily fulfilled the requirements established
by ASQE for professional attainment of the

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Date Issued: **December 5, 2016**

Expiration Date:



VERIFIED CERTIFICATE

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A handwritten signature in black ink, reading "Daniella Picciotti".

Daniella Picciotti, ASQE Chair

Association for Supply Chain Management

Board of Directors has conferred upon

Vincent Gaspersz, CPIM

the lifetime designation of

Certified in Planning and Inventory Management

*In recognition of exceptional dedication and commitment to maintaining all
necessary certification requirements as guided by the APICS Certification Committee on*

02 April 1996



Abe Eshkenazi, CSCP, CPA, CAE
ASCM Chief Executive Officer



Michael Wasson, CSCP
ASCM 2021 Chair of the Board

Association for Supply Chain Management

Board of Directors has conferred upon

Vincent Gaspersz, CSCP

the lifetime designation of

Certified Supply Chain Professional

*In recognition of exceptional dedication and commitment to maintaining all
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21 June 2008



Abe Eshkenazi, CSCP, CPA, CAE
ASCM Chief Executive Officer



Michael Wasson, CSCP
ASCM 2021 Chair of the Board

Association for Supply Chain Management

Board of Directors has conferred upon

Vincent Gaspersz, CPIM-F

The Lifetime designation of

Certified in Planning and Inventory Management Fellow

In recognition of exceptional dedication and commitment to maintaining all necessary certification requirements with distinction and honor as guided by the APICS Certification Committee on

17 April 1998



Association for Supply Chain Management

Board of Directors has conferred upon

Vincent Gaspersz, CSCP-F

The Lifetime designation of

Certified Supply Chain Professional Fellow

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20 March 2018



DMAIC Approach for Lean Six Sigma Projects

By: Vincent Gaspersz, Lean Six Sigma Master Black Belt

The Objectives of Lean Six Sigma Project: To eliminate E-DOWNTIME Waste on the processes (SIPOC = Supplier-Input-Process-Output-Customer) and improving the processes capability to become six sigma ($C_p = 2.00$ and 3.4 DPMO, Defects Per Million Opportunities).

Note: E-DOWNTIME is an acronym:

E = Environmental, health and safety Waste

D= Defect or error Waste

O = Overproduction Waste

W = Waiting time Waste

N = Not utilizing people KSA (knowledge, skills, attitude) Waste

T = Transportation Waste

I = Inventory Waste

M = Motion Waste

E = Excess processing Waste

DMAIC Phase of Lean Six Sigma Project

1. Define Phase (D)

Deliverables Of Define Phase:

- Fully trained team is formed, supported, and committed to work on improvement project.
- Customers identified and high impact characteristics (CTQs) defined, team charter developed, business process mapped.

Checkpoints For Completion:

Team Readiness

- Team is sponsored by a champion or business leader.
- Team formed and team leaders (MBBs/Coaches and BBs/Project Leads) assigned.
- Improvement team members fully trained on Six Sigma and DMAIC.
- Full participation by members in regularly held team meetings.
- Team members perform project work when assigned and in a timely fashion.
- Team members regularly document their project work.
- Team is equipped with available and reliable resources.

Customers (and CTQs)

- Customer(s) identified and segmented according to their different needs and requirements.
- Data collected and displayed to better understand customer(s) critical needs and requirements.

Team Charter

- Project management charter, including business case, problem and goal statements, project scope, milestones, roles and responsibilities, communication plan.

Business Process Mapping

- Completed, verified, and validated high-level 'as is' (not 'should be' or 'could be') business process map.
- Completed SIPOC representation, describing the Suppliers, Inputs, Process, Outputs, and Customers.

Questions To Determine Appropriate Application:

Team Readiness

- Who are the improvement project team members, including BBs/Project Leads and MBBs/Coaches?
- Has everyone on the team, including the team leaders, been properly trained (on DMAIC)?
- Does the team have regular meetings?
- How often are the team meetings?
- Is there regularly 100% attendance at the team meetings? If not, have appointed substitutes attended to preserve cross-functionality and full representation?
- If substitutes have been appointed, have they been briefed on the project charter and goals and received regular communications as to the project's progress to date?
- Has the project work been fairly and/or equitably divided and delegated among team members who are qualified and capable to perform the work? Has everyone contributed?
- Are there any constraints known that bear on the ability to perform project work? How is the team addressing them?
- How is the team tracking and documenting its work?
- Is the team adequately staffed with the desired cross-functionality? If not, what additional resources are available to the team?

Customers (and CTQs)

- Has the customer(s) been identified?
- Are there different segments of customers?
- Has the improvement team collected the 'voice of the customer' (obtained feedback - qualitative and quantitative)?
- What customer feedback methods were used to solicit their input?
- Have the customer needs been translated into specific, measurable requirements? How?

Team Charter

- Has a team charter been developed and communicated?
- Has the charter changed at all during the course of the project? If so, when did it change and why?

- Does the charter include the following?
 - Business Case: What are the compelling business reasons for embarking on this Lean Six Sigma project? Is the Lean Six Sigma project linked to key business goals and objectives? What key business process output measure(s) will the Lean Six Sigma project leverage and how? What are the rough order estimates on cost savings/opportunities on this Lean Six Sigma project?
 - Problem Statement: What specifically is the problem? Where does it occur? When does it occur? What is its extent?
 - Goal Statement: What is the goal or target for the Lean Six Sigma improvement team's project? Do the problem and goal statements meet the SMART criteria (specific, measurable, attainable, relevant, and time-bound)? Has anyone else (internal or external to the organization) attempted to solve this problem or a similar one before? If so, what knowledge can be leveraged from these previous efforts? How will the Lean Six Sigma project team and the organization measure complete success for this project?
 - Roles and Responsibilities: What are they for each team member and its leadership? Where is this documented?
 - Lean Six Sigma Project Scope: What are the boundaries of the scope? What is in bounds and what is not? What is the start point? What is the stop point? How does the project manager ensure against scope creep? Is the project scope manageable? What constraints exist that might impact the team?
 - Milestones: When was the Lean Six Sigma project start date? When is the estimated completion date? Is the Lean Six Sigma project currently on schedule according to the plan? Has a Lean Six Sigma project plan, Gantt chart, or similar been developed/completed? How did the Lean Six Sigma project manager receive input to the development of the plan and the estimated completion dates/times of each activity? Is there a critical path to complete the Lean Six Sigma project? How will variation in the actual durations of each activity be dealt with to ensure that the expected Lean Six Sigma project completion date is met?
 - Communication Plan: What are the dynamics of the communication plan? What critical content must be communicated - what, why, when, where, who, how and how-much (5W-2H)? When are meeting minutes sent out? Who is on the distribution list? How do you keep key subject matter experts in the loop?

Business Process Mapping or Value Stream mapping

- Has a high-level 'as is' process map been completed, verified and validated?
- Has a SIPOC diagram been produced describing the Suppliers, Inputs, Process, Outputs, and Customers?
- Has the E-DOWNTIME Waste been identified?
- Is the Lean Six Sigma improvement team aware of the different versions of a process: what they think it is vs. what it actually is vs. what it should be vs. what it could be?
- Is the current 'as is' process being followed? If not, what are the discrepancies?
- Are different versions of process maps needed to account for the different types of inputs?

- How was the 'as is' process map developed, reviewed, verified and validated?
- What tools and roadmaps did you use for getting through the Define phase?

2. Measure Phase (M)

Deliverables Of Measure Phase:

Key measures identified, data collection planned and executed, process variation displayed and communicated, performance base lined, sigma level and process capability (Cp) calculated.

Checkpoints For Completion:

Key Measures Identified

- Key measures identified and agreed upon.
- High impact defects defined and identified in the business process.

Data Collection Planned and Executed

- Solid data collection plan established that includes measurement systems analysis.
- Data collected on key measures that were identified.

Process Variation Displayed/Communicated

- Process variation components displayed/communicated using suitable charts, graphs, plots.
- Process variability accounted for.

Performance Baseline/Sigma Calculation

- Measure baseline process performance (capability, yield, sigma level).

Questions To Determine Appropriate Application:

Key Measures Identified

- What are the key input variables? What the key process variables? What are the key output variables?
- What key measures identified indicate the performance of the business process?
- What are the agreed upon definitions of the high impact characteristics (CTQs), defect(s), unit(s), and opportunities that will figure into the sigma calculations and process capability metrics?

Data Collection Planning and Execution

- Was a data collection plan established?
- What data was collected (past, present, future/ongoing)?
- Who participated in the data collection?
- How did the team select a sample?

- What has the team done to assure the stability and accuracy of the measurement process?
- Was a gauge R&R conducted?
- Was stratification needed in the data collection and analysis?

Process Variation Displayed/Communicated

- What charts has the team used to display the components of variation in the process?
- What does the chart tell us in terms of variation?

Performance Baseline/Sigma Calculation

- What is the current process performance in terms of its capability indices?
- What is the current process performance in terms of its yield or sigma level(s)?
- How large is the gap between current performance and the customer-specified (goal) performance?
- Have you found any 'ground fruit' or 'low-hanging fruit' for immediate remedies to the gap in performance?
- What particular quality tools did the team find helpful in getting through the measure phase?

3. Analyze Phase (A)

Deliverables Of Analyze Phase:

Data and process analysis, root cause analysis, quantifying the gap/opportunity.

Checkpoints For Completion:

Data and Process Analysis

- Identify gaps between current performance and the goal performance.

Root Cause Analysis

- Generate list of possible causes (sources of variation).
- Segment and stratify possible causes (sources of variation).
- Prioritize list of 'vital few' causes (key sources of variation).
- Verify and quantify the root causes of variation.

Quantifying the Gap/Opportunity

- Determine the performance gap.
- Display and communicate the gap/opportunity in financial terms.

Questions To Determine Appropriate Application:

Data and Process Analysis

- What does the data say about the performance of the business process?

- Did any value-added analysis or 'lean thinking' take place to identify some of the gaps shown on the 'as is' process map?
- Was a detailed process map created to amplify critical steps of the 'as is' business process?
- How was the map generated, verified, and validated?
- What did the team gain from developing a sub-process map?
- What were the crucial 'moments of truth' on the map?
- Were there any cycle time improvement opportunities identified from the process analysis?
- Were any designed experiments used to generate additional insight into the data analysis?
- Did any additional data need to be collected?
- What model would best explain the behavior of output variables in relation to input variables?

Root Cause Analysis

- What tools were used to generate the list of possible causes?
- Was a cause-and-effect diagram used to explore the different types of causes (or sources of variation)?
- What tools were used to narrow the list of possible causes?
- Were Pareto charts (or similar) used to portray the 'heavy hitters' (or key sources of variation)?
- What conclusions were drawn from the team's data collection and analysis?
- How did the team reach these conclusions?

Quantifying the Gap/Opportunity

- What is the cost of poor quality as supported by the team's analysis?
- Is the process severely broken such that a re-design is necessary?
- Would this project lend itself to a DFLSS (Design For Lean Six Sigma) project?
- What are the revised rough order estimates of the financial savings/opportunity for the improvement project?
- Have the problem and goal statements been updated to reflect the additional knowledge gained from the analyze phase?
- Have any additional benefits been identified that will result from closing all or most of the gaps?
- What were the financial benefits resulting from any 'ground fruit or low-hanging fruit' (quick fixes)?
- What quality tools were used to get through the analyze phase?

4. Improve Phase (I)

Deliverables Of Improve Phase:

Generate (and test) possible solutions, select the best solutions, design implementation plan.

Checkpoints For Completion:

Generating (and Testing) Possible Solutions

- Possible solutions generated and tested.

Selecting The Best Solution(s)

- Optimal solution selected based on testing and analysis.
- New and improved process ('should be') maps developed.
- Cost/benefit analysis of optimal solution(s).
- Small-scale pilot for proposed improvement(s).
- Pilot data collected and analyzed.
- Improved process ('should be') maps modified based on pilot data and analysis.
- Project impact on utilizing the best solution(s).

Designing Implementation Plan

- Solution implementation plan established, including schedule/work breakdown structure, resources, risk management plan, cost/budget, and control plan.
- Contingency plan established.

Questions To Determine Appropriate Application:

Generating (And Testing) Possible Solutions

- How did the team generate the list of possible solutions?
- What tools were used to tap into the creativity and encourage 'outside the box' thinking?

Selecting The Best Solution(s)

- What tools were used to evaluate the potential solutions?
- Were any criteria developed to assist the team in testing and evaluating potential solutions?
- What were the underlying assumptions on the cost-benefit analysis?
- Are there any constraints (technical, cultural, or otherwise) that would inhibit certain solutions?
- Was a pilot designed for the proposed solution(s)?
- Describe the design of the pilot and what tests were conducted, if any?
- What conclusions were drawn from the outcomes of the pilot?
- What lessons, if any, from the pilot were incorporated into the design of the full-scale solution?

Designing The Implementation Plan

- Is the improvement plan best served by using the DFLSS (Design For Lean Six Sigma) approach?
- What is the implementation plan?
- What poka-yoke or error proofing will be done to address some of the discrepancies observed in the 'as is' process?
- What does the 'should be' process map/design look like?
- How does the solution remove the key sources of variation discovered in the analyze phase?

- What attendant changes will need to be made to ensure that the solution is successful?
- What communications are necessary to support the implementation of the solution?
- How will the team or the process owner(s) monitor the implementation plan to see that it is working as intended?
- What is the team's contingency plan for potential problems occurring in implementation?
- How will the organization know that the solution worked?
- What tools were most useful during the improve phase?

5. Control Phase (C)

Deliverables Of Control Phase:

Documented and implemented monitoring plan, standardized process, documented procedures, response plan established and deployed, transfer of ownership (project closure).

Checkpoints For Completion:

Monitoring Plan

- Control plan in place for sustaining improvements.

Process Standardization

- New process steps, standards, and documentation are ingrained into normal operations.

Documented Procedures

- Operating procedures are consistent.
- Knowledge gained on process is shared and institutionalized.

Response Plan

- Response plans established, understood, and deployed.

Transfer of Ownership (Project Closure)

- Transfer ownership and knowledge to process owner and process team tasked with the responsibilities.

Questions To Determine Appropriate Application:

Monitoring Plan

- What is the control/monitoring plan?
- How will the process owner and team be able to hold the gains?
- What key inputs and outputs are being measured on an ongoing basis?
- How will input, process, and output variables be checked to detect for sub-optimal conditions?

- How will new or emerging customer needs/requirements be checked/communicated to orient the process toward meeting the new specifications and continually reducing variation?
- Are control charts being used or needed?
- How will control chart readings and control chart limits be checked to effectively monitor performance?
- Will any special training be provided for control chart interpretation?
- Is this knowledge imbedded in the response plan?
- What is the most recent process yield (or sigma calculation)?
- Does the process performance meet the customer's requirements?

Process Standardization

- Has the improved process and its steps been standardized?

Documented Procedures

- Is there documentation that will support the successful operation of the improvement?
- Does job training on the documented procedures need to be part of the process team's education and training?
- Have new or revised work instructions resulted?
- Are they clear and easy to follow for the operators?

Response Plan

- Is a response plan in place for when the input, process, or output measures indicate an 'out-of-control' condition?
- What are the critical parameters to watch?
- Does the response plan contain a definite closed loop continual improvement scheme (e.g., PDCA = Plan-Do-Check-Act or DMAIC = Define-Measure-Analyze-Improve-Control)?
- Are suggested corrective actions indicated on the response plan for known causes to problems that might surface?
- Does a troubleshooting guide exist or is it needed?

Transfer Of Ownership (Project Closure)

- Who is the process owner?
- How will the day-to-day responsibilities for monitoring and continual improvement be transferred from the improvement team to the process owner?
- How will the process owner verify improvement in present and future sigma levels, process capabilities?
- Is there a recommended audit plan for routine surveillance inspections of the DMAIC project's gains?
- What is the recommended frequency of auditing?
- What should the next improvement project be that is related to the process?
- What quality tools were useful in the control phase?

Integrating and Institutionalizing Improvements, Knowledge and Learnings

