

Curriculum Vitae

Professor D.N. P. (Pra) Murthy

1. Academic Qualifications

Ph.D. (Applied Mathematics) Harvard University (1971)

M.S.: Harvard University (1971)

M.E. (Hons.): Indian Institute of Science (1967)

B.E. (Hons.): Jabalpur University, India. (1965)

2. Present and Past Appointments

Present

- Professor Emeritus, The University of Queensland

Past

- Lecturer, Senior Lecturer, Reader, Professor of Engineering & Operations Management (Personal Chair), Research Professor at the University of Queensland
- Academic Director, Director, Technology Management Centre, The University of Queensland
- Senior Scientific Advisor, Norwegian University of Science and Technology, Trondheim, Norway.

Visiting Appointments

1. Visiting Professor, Indian Institute of Technology, Delhi, India
2. Visiting Professor, Indian Institute of Technology, Kanpur, India
3. Visiting Research Fellow, University of California, Berkeley
4. Visiting Professor, George Washington University, Washington D.C
5. Visiting Professor, University of Southern California, Los Angeles
6. Visiting Professor, University of Arizona, Tucson
7. Visiting Professor, Norwegian University of Science and Technology, Trondheim
8. Distinguished Visiting Professor, National University of Singapore
9. Visiting Professor, Eindhoven University of Technology, Eindhoven, Holland
10. Visiting Professor, University of Abertay, Dundee, Scotland
11. Visiting Professor, Technical University, Tampere, Finland
12. Campus Fellow, The University of Salford, Manchester, England
13. Visiting Professor, University of Science and Technology Changsha, China
14. Visiting Professor, University of Communication, Chengdu, China
15. Visiting Professor, Massey University, Palmerston North, New Zealand
16. Adjunct Professor, Cranefield University, England
17. Adjunct Professor, King Fahd University, Daharan, Saudi Arabia
18. Visiting Professor, Lulea Technical University, Lulea, Sweden
19. Visiting Professor, Aalto University, Helsinki, Finland

3. Services to Professional Societies

I am on the editorial boards of the following journals:

- International Journal of Production Economics
- Mathematical & Computer Modelling
- OPSEARCH - Journal of the Indian Operations Research Society
- IIE Transactions on Quality and Reliability Engineering
- Reliability, Quality and Safety Engineering
- International Journal of Agile Management System
- Journal of Quality and Maintenance Engineering

I have served on the Advisory Boards for over 30 international conferences in reliability and technology management and reviewed paper for over 30 international journals.

4. Teaching Experience and Thesis Supervision

Teaching

I have taught a variety of subjects at undergraduate and postgraduate levels over the last 33 years. These cover a range of topics in engineering, technology, management, and mathematics.

Thesis Supervision

I have supervised several research theses and case studies at postgraduate and undergraduate levels.

Postgraduate Research Theses	26
Undergraduate Theses	63
Industry Case Studies	35

5. Research Interests

My research interests in the past included mathematical system theory, estimation in dynamical systems, numerical methods for solving differential equations, operations management and technology management.

Currently, my interests are in reliability theory (one- and two-dimensional failure modelling, reliability specification in design, failure data analysis), maintenance (outsourcing of maintenance, maintenance of leased equipment) and warranties (warranty cost analysis, warranty logistics, warranty management, warranty data analysis). The focus is on looking at problems in a framework that integrates technical, commercial and management issues.

I have been involved in joint research with groups in Korea, Indonesia, Thailand, Singapore, Japan, China, India, Finland, Norway, Sweden, England, Scotland, and the USA.

I have given several keynote lectures at various international conferences and given over 200 research seminars at several universities around the world.

6. Publications

• Books and Book Chapters	
Books	14
Book Chapters	25
• Edit Conference Proceedings	4
• Edit Special Issues of Journals	4
• Encyclopaedia articles	5
• Journal Publications	170
• Conference Papers	155

Books

1. *Mathematical Modelling: A Tool for Problem Solving in Engineering, Physical, Biological & Social Sciences* - DNP Murthy, NW Page and EY Rodin; Pergamon Press, Oxford, 1990 (pp 339 + xvi)
2. *Warranty Cost Analysis*: WR Blischke and DNP Murthy, Marcel Dekker, New York, 1994 (pp 731 + xiii)
3. *Product Warranty Handbook*: WR Blischke and DNP Murthy (eds), Marcel Dekker, New York, 1996 (pp 925 + xxiii)
4. *Reliability Modelling, Prediction and Optimization*: WR Blischke and DNP Murthy, Wiley, New York, 2000 (pp 832 + xxvii)
5. *Case Studies in Reliability and Maintenance*: WR Blischke and DNP Murthy (eds), Wiley, New York, 2002 (pp 661 + xxiii)
6. *Weibull Models*: DNP Murthy, M Xie and R Jiang, Wiley, New York, 2003 (pp 395 +xvi)
7. *Warranty Management and Product Manufacturing*: DNP Murthy and WR Blischke, Springer Verlag, London, 2005 (pp 302 + xviii)
8. *Complex System Maintenance Handbook*: HAH Kobbacy and DNP Murthy (eds), Springer Verlag, London, 2008 (pp 657 + xi)
9. *Product Reliability – Performance and Specifications*: DNP Murthy, T Osteras and M Rausand, Springer Verlag, London, 2008 (pp 277 +vii)
10. *Maintenance – Decision Models for Management*: R Jiang and DNP Murthy, Science Press, Beijing, China, 2008 (pp 308 +xiii)
11. *Warranty Data Collection and Analysis*: WR Blischke, MK Rezaul and DNP Murthy, Springer Verlag, London, 2011 (pp 589 + xxiv)
12. *Extended Warranties, Maintenance and Lease Contracts*: DNP Murthy and N. Jack, Springer Verlag, London, 2014 (pp 399+xv)
13. *Introduction to Maintenance*: M Ben-Daya, U Kumar and DNP Murthy, Wiley, London, 2016
14. *Warranty Fraud Management*: M Kurvinen, I Töyrylä and DNP Murthy, Wiley, New York, 2016

Book Chapters

1. WR Blischke and DNP Murthy, Warranties: Concepts and Classification, Chapter 1 of *Product Warranty Handbook*, WR Blischke and DNP Murthy (eds), Marcel Dekker, New York, 1996, pp 5 - 28)

2. DNP Murthy and WR Blischke, Framework for the Study of Warranty, Chapter 3 of *Product Warranty Handbook*, WR Blischke and DNP Murthy (eds), Marcel Dekker, New York, 1996, pp 47 – 74
3. DNP Murthy, Modelling for the Study of Warranties, Chapter 6 of *Product Warranty Handbook*, WR Blischke and DNP Murthy (eds), Marcel Dekker, New York, 1996, pp 133 – 156
4. RJ Wilson and DNP Murthy, Two Dimensional Pro-rata and Combination Warranties, Chapter 14 of *Product Warranty Handbook*, WR Blischke and DNP Murthy (eds), Marcel Dekker, New York, 1996, pp 365 – 388
5. DNP Murthy, Warranty and Design, Chapter 21 of *Product Warranty Handbook*, WR Blischke and DNP Murthy (eds), Marcel Dekker, New York, 1996, pp 515-541
6. DNP Murthy, Warranty and Manufacturing, Chapter 23 of *Product Warranty Handbook*, WR Blischke and DNP Murthy (eds), Marcel Dekker, New York, 1996, pp 585-620
7. DNP Murthy, Warranty Servicing Strategies, Chapter 24 of *Product Warranty Handbook*, WR Blischke and DNP Murthy (eds), Marcel Dekker, New York, 1996, pp 621-653
8. I Djamaludin, DNP Murthy and WR Blischke, Bibliography on Warranties, Chapter 24 of *Product Warranty Handbook*, WR Blischke and DNP Murthy (eds), Marcel Dekker, New York, 1996, pp 839-916
9. DNP Murthy, I Djamaludin and RJ Wilson, Lot-sizing and inspection for items sold with warranty, in *Optimization in Quality Control*, KS Al-Sultan and MA Rahim (eds) Kluwer Academic Publishers, New York, 1997, pp 317-340.
10. DNP Murthy and R Jiang, Mixture of Weibull Distributions - Parametric Characterisation of the Density Function, in *Frontiers in Reliability*, AP Basu, SK Basu and S Mukhopadhaya (eds), World Scientific, Singapore, 1998, pp 249 – 270.
11. DNP Murthy and WR Blischke, Reliability and Warranty, in *Handbook of Statistics [on Reliability]*, N Balakrishnan and CR Rao (eds), North Holland, Amsterdam, 2001, pp
12. CD Lai, M Xie and DNP Murthy, Bathtub Failure Rate, in *Handbook of Statistics [on Reliability]*, N Balakrishnan and CR Rao (eds), North Holland, Amsterdam, 2001, pp 69-106
13. DNP Murthy, Maintenance Service Contracts, in *Maintenance Modeling and Optimization: State-Of-The-Art*, M Ben-Daya (ed), Kluwer Academic Publishers, Boston, 2000, pp 111-132
14. K Lyons and DNP Murthy: Warranty and Manufacturing, in *Integrated Optimal Modelling in PIQM: Production Planning, Inventory, Quality and Maintenance*, MA Rahim and M. Ben-Daya (eds), Kluwer Academic Publishers New York, 2001, pp 289 - 324
15. DNP Murthy and I Djamaludin, Warranty and Quality, in *Integrated Optimal Modelling in PIQM: Production Planning, Inventory, Quality and Maintenance*, MA Rahim and M Ben-Daya (eds), Kluwer Academic Publishers, New York, 2001, pp 325-360
16. DNP Murthy and N Jack, Warranty and Maintenance, in *Reliability Engineering Handbook*, H Pham (ed), Springer-Verlag, London, 2002, pp 305-316
17. P Townson, DNP Murthy and H Gurgenci, Optimisation of Dragline Load, in *Case Studies in Reliability and Maintenance*, WR Blischke and DNP Murthy (eds), Wiley, New York, 2002, pp

18. M Xie, CD Lai and DNP Murthy, Weibull-related Distributions for the Modelling of Bathtub shaped failure rate functions, in *Mathematical and Statistical Methods in Reliability*, K Doksum and B Lindquist (eds), World Scientific Pub, Singapore, 2003, pp 283-298
19. CD Lai, M Xie and DNP Murthy, Weibull Distributions, in *Springer Handbook of Engineering Statistics*, H. Pham (ed), Springer-Verlag, London, 2006, pp 63-78
20. DNP Murthy, J Baik, R Wilson and M Bulmer, Two-dimensional Failure Models, in *Springer Handbook of Engineering Statistics*, H. Pham (ed), Springer-Verlag, London, 2006, pp 97-111
21. DNP Murthy and KAH Kobbacy, An Overview, in *Complex System Maintenance Handbook*, KAH Kobbacy and DNP Murthy (eds), Springer Verlag, London, 2008, pp 3-18
22. DNP Murthy and J. Pongpech, Maintenance of leased equipment, in *Complex System Maintenance Handbook*, KAH Kobbacy and DNP Murthy (eds), Springer Verlag, London, 2008, pp 395-415
23. DNP Murthy and N. Jack, Outsourcing of Maintenance, in *Complex System Maintenance Handbook*, KAH Kobbacy and DNP Murthy (eds), Springer Verlag, London, 2008, pp 375-393
24. DNP Murthy and N Jack, Warranty and Maintenance in *Handbook on Maintenance Engineering and Management*, M Ben-Daya, SO Duffuaa, A. Raouf, J Knezevic, D. Ait-Kadi (eds), Springer Verlag, London, 2009, pp 461-478
25. DNP Murthy, N Jack and U Kumar, Maintenance Outsourcing: Issues and Challenges, in *Stochastic Reliability and Maintenance Modeling*, T. Dohi and T. Nakagawa (eds.), Springer Verlag, London, 2012, pp 41-62

Conference Proceedings

1. *Stochastic Models in Engineering, Technology and Management*, DNP Murthy and S Osaki (eds), World Scientific Publishers, 1993 (pp 612 + xiii)
2. *Stochastic Models in Engineering, Technology and Management*, RJ Wilson, DNP Murthy and S Osaki (eds), The University of Queensland, 1996 (pp 663 + x)
3. *Reliability Modelling and Analysis*, M Xie and DNP Murthy (eds), The National University of Singapore, 1998 (pp 168 + v)
4. *Stochastic Models in Engineering, Technology and Management*, RJ Wilson, S Osaki and DNP Murthy (eds), The University of Queensland, 1999 (pp 563 + ix)

Special Issues of Journals

1. *Stochastic Models in Engineering, Technology and Management*, S Osaki, DNP Murthy and RJ Wilson [Guest Editors], *Mathematical and Computer Modelling*, v 22, n 10 – 12, 1995
2. *Reliability Modelling and Analysis*, M Xie and DNP Murthy [Guest Editors], *International Journal of Reliability, Quality and Safety Engineering*, v 6, n 3, 1999
3. *Stochastic Models in Engineering, Technology and Management*, RJ Wilson, S Osaki and DNP Murthy [Guest Editors], *Mathematical and Computer Modelling*, v 31, n 10-12, 2000
4. *Stochastic Models in Engineering, Technology and Management*, RJ Wilson, M Faddy and DNP Murthy [Guest Editors] *Mathematical and Computer Modelling*, v 38, n 11-13, 2003

Articles in Encyclopaedias

1. DNP Murthy and WR Blischke, Reliability, in *Kirk-Othmer Encyclopaedia of Chemical Technology*, Wiley, New York, 2006, v 26, pp 980-998
2. DNP Murthy and WR Blischke, Warranty Cost Analysis, in *Encyclopaedia of Statistics in Quality and Reliability*, F. Ruggeri, R. Kenett and F. W. Faltin [Editors], Wiley, New York, 2007, pp 2073-2079
3. DNP Murthy and N Jack, Warranty Servicing, in *Encyclopaedia of Statistics in Quality and Reliability*, F. Ruggeri, R. Kenett and F. W. Faltin [Editors], Wiley, New York, 2007, pp 2091-97
4. DNP Murthy and WR Blischke, Warranty Cost Analysis, in *Encyclopaedia of Statistics of Quantitative Risk analysis*, B. Everitt and E. Melnick [Editors], Wiley, New York
5. CD Lai, DNP Murthy and M Xie, Weibull Models, in *Wiley Interdisciplinary Reviews: Computational Statistics (WIREs: Computational Statistics)*, E. J. Wegman, Y. H. Said and D. W. Scott [Editors], Wiley, New York

Journal Publications [Since 2000]

1. G Chattopadaya and DNP Murthy, warranty cost analysis for second hand products, *Mathematical and Computer Modelling*, **31** (2000) 81-88
2. A Moini and DNP Murthy, optimal lot sizing with unreliable production system, *Mathematical and Computer Modelling*, **31** (2000) 245-250
3. E Ashgarizadeh and DNP Murthy, Service contracts - a stochastic model, *Mathematical and Computer Modelling*, **31** (2000) 11-20
4. AZMO Hussain and DNP Murthy, Warranty and optimal redundancy with uncertain quality, *Mathematical and Computer Modelling*, **31** (2000) 175-182
5. DNP Murthy and WR Blischke, Strategic warranty management - a life cycle approach, *IEEE Trans. on Engineering Management*, **47** (2000) 40 - 54
6. MJ Zuo, B Liu and DNP Murthy, Replacement-repair policy for multi-state deteriorating products under warranty, *Euro. Jr. Operational Res.*, **123** (2000) 519-530
7. DNP Murthy and K Ravi Kumar, Total quality in a channel of distribution, *Int. Jr. Prod. Eco.*, **67** (2000) 253-268
8. G Chatopadaya and DNP Murthy, Warranty cost analysis for second-hand products sold with cost sharing policies, *Int. Trans. on Operational Res.*, **8** (2001), 47-68
9. CS Kim, I Djamaludin and DNP Murthy, Warranty cost analysis with varying usage intensity, *Int. Trans on Operational Res.*, **9** (2001), 1-11
10. I Djamaludin, DNP Murthy and CS Kim, Warranty and preventive maintenance, *Int. Jr. Reliability, Quality and Safety Engineering*, **8** (2001), 89-107.
11. R Jiang, DNP Murthy and M Ji, Models involving two Inverse Weibull distributions, *Reliability Engineering & System Safety*, **73** (2001), 73-81.
12. N Jack and DNP Murthy, Servicing strategies for items sold with warranty, *Journal of Operational Research*, **52** (2001), 1284-1288
13. N Jack, BP Iskandar and DNP Murthy, Comments on "Maintenance Policy with two-dimensional warranty", *Reliability Engineering & System Safety* **82** (2001), 105-109
14. R Jiang DNP Murthy and P Ji, Study of n-fold multiplicative model, *Reliability Engineering & System Safety* **74** (2001), 211-219.

15. DNP Murthy and I Djamaludin, Product warranty – A review, *International Journal of Production Economics*, **79** (2002), 231-260.
16. DNP Murthy, A Atrens and JA Eccleston, Strategic maintenance management, *Journal of Quality in Maintenance Engineering*, **8** (2002), 287-305
17. N Jack and DNP Murthy, A new preventive maintenance strategy for items sold under warranty, *IMA Journal on Management Mathematics*, **13** (2002), 121-129
18. CD Lai, M Xie and DNP Murthy, A modified Weibull distribution, *IEEE Trans on Reliability*, **52** (2003), 33-37
19. AZMO Hussain and DNP Murthy, Warranty and reliability improvement through product development, *Mathematical and Computer Modelling*, **38** (2003), 1211-1217
20. BP Iskandar and DNP Murthy, Repair-replace Strategies for two-dimensional warranty policies, *Mathematical and Computer Modelling*, **38** (2003), 1233-1241
21. R Jiang, and DNP Murthy, Study of n-fold Weibull competing risk model, *Mathematical and Computer Modelling*, **38** (2003), 1259-1273
22. B Baik, DNP Murthy and N Jack, Two-dimensional failure modelling and minimal repair, *Naval Research Logistics*, **51** (2003), 345-362
23. DNP Murthy, O Solem and T Roren, Product Warranty logistics: Issues and challenges, *Euro. Jr. Oper. Res.*, **156** (2004), 110-126
24. CS Kim, I Djamaludin and DNP Murthy, Warranty and discrete preventive maintenance, *Reliability Engineering & System Safety*, **84** (2004), 301-309
25. N Jack and DNP Murthy, Warranty servicing and customer satisfaction, *IMA Journal on Management Mathematics*, **15**, (2004), 111-124
26. G Chattopadhyay and DNP Murthy, Optimal reliability improvement for used items sold with warranty, *International Journal of Reliability and Applications*, **5**, (2004), 47-52
27. DNP Murthy, M Bulmer and JE Eccleston, Weibull model selection, *Reliability Engineering & System Safety*, **86**, (2004), 257-267
28. BP Iskandar, DNP Murthy and N. Jack, A new repair-replace strategy for items sold with two dimensional warranties, *Computers and Operational Research*, **32** (2005), 669-682
29. T Osteras, DNP Murthy, M Rausand, Product performance and specification, *Journal of Engineering Design*, **17** (2005), 177-192
30. DNP Murthy, Product warranty and reliability, *Annals of Operational Research*, **143** (2006), 133-146
31. J Baik, DNP Murthy N Jack, Erratum: Two-Dimensional Failure Modelling with Minimal Repair, *Naval Research Logistics*, **53** (2006), 115-116
32. J Pongpech, J. and DNP Murthy, Optimal periodic preventive maintenance policy for leased equipment, *Reliability Engineering & System Safety*, **91** (2006), 772-777
33. J Jaturnnatee, DNP Murthy and R Boodiskulchok, Optimal Upgrade and Preventive Maintenance for Used Equipment under Lease, *Journal of Quality in Maintenance Engineering*, **12** (2006), 52-67
34. J Jaturnnatee, DNP Murthy and R Boodiskulchok, Optimal preventive maintenance of leased equipment, *European Journal of Operational Research*, **174** (2005), 201-215
35. P Townson and DNP Murthy, A critical evaluation of Weibull accelerated-life models, *Quality Technology & Quantitative Management Journal*, **4** (2007), 35-50

36. DS Saroso and DNP Murthy, Product quality improvement, *International Journal of Technology Management*, **37** (2007), 29-49
37. T Osteras, DNP Murthy and M Rausand, Reliability specification in new product development, *International Journal on Product Development*, In print
38. N Jack and DNP Murthy, Flexible extended warranties and related optimal strategies, *Journal of Operational Research*, **58** (2007), 1612-1620
39. HZ Huang, ZJ Liu and DNP Murthy, Optimal reliability for products under warranty, *IIE Transactions*, **39** (2007), 819-827
40. WY Yun, DNP Murthy and N. Jack, Warranty servicing strategies with imperfect repair, *International Journal of Production Economics*, **111** (2008), 159-169
41. DNP Murthy, Product Reliability and Warranty: An Overview and Future Research, *Producao*, **17** (2007), 426-434
42. J Baik and DNP Murthy, Reliability assessment based on two-dimensional warranty data, *International Journal of Reliability and Safety*, **2** (2008), 190-208
43. R Jiang and DNP Murthy, Impact of quality variations on product reliability, *Reliability Engineering & System Safety*, **94** (2009), 490-496
44. N Jack. B Iskandar and DNP Murthy, A repair-replace strategy based on usage rate for items sold with a two-dimensional warranty, *Reliability Engineering & System Safety*, **94** (2009), 611-617
45. M Bebbington, DNP Murthy, CD Lai and R. Zitkis, Modelling N- and W-shaped hazard rate functions without mixing distributions, *Proceedings of the Institution of Mechanical Engineers – Part O: Journal of Risk and Reliability*, **223** (2009), 59-69
46. DNP Murthy, M Rausand and S Virtanen, Investment in new product reliability, *Reliability Engineering & System Safety*, **94** (2009), 1593-1600
47. DNP Murthy, PE Hagmark and S Virtanen, Product variety and reliability, *Reliability Engineering & System Safety*, **94** (2009), 1601-1608
48. DNP Murthy, T Osteras and M Rausand, Component reliability specification, *Reliability Engineering & System Safety*, **94** (2009), 1608-1617
49. M Bebbington, DNP Murthy, CD Lai and R. Zitkis, Rational polynomial hazard functions, *International Journal of Performability Engineering*, **6** (2010), 35-52
50. DNP Murthy and WR Blischke, Warranty data and effective warranty management, *International Journal of Product Development*, **12** (2010), 202-219
51. R Jiang and DNP Murthy, A study of Weibull distribution shape parameter: Properties and Significance, *Reliability Engineering and System Safety*, **96** (2011), 1619-1626
52. BP Iskandar, N Jack and DNP Murthy, Two new servicing strategies for products sold with warranty, Accepted for publication in *Asia Pacific Journal of Operational Research*, , **29** (2012), 1240022-1 - 16
53. ZS Ye, DNP Murthy, M Xie, and LC Tang, Optimal burn-in for repairable products sold with a two-dimensional warranty, *IIE Transactions*, **45** (2013), 164-176
54. DNP Murthy, MR Karim, A Ahmadi, *Reliability Engineering and System Safety*, Data management in maintenance outsourcing, **142** (2015), 100-110
55. ZS Ye and DNP Murthy, Warranty menu design for a two-dimensional warranty, *Reliability Engineering and System Safety*, **155** (2016), 21-29
56. DNP Murthy and N Jack, Game theoretic modelling of service agent warranty fraud, *Journal of Operational Research*, xxx (2016), xxx-xxx

6. Industry Consulting / Short Courses

I have consulted for several businesses in Australia, USA and Europe on topics in reliability, quality, warranty, new product development, operations management and data analysis.

I have run several short courses on quality, reliability, maintenance, warranty and, technology management in Australia, India, Singapore, Indonesia, Thailand, Norway, Sweden, Germany, Netherlands, England and the USA.