

# 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*

- Research Professor, The University of Queensland
- Senior Scientific Advisor, Norwegian University of Science and Technology, Trondheim, Norway.

#### *Past*

- Lecturer, Senior Lecturer, Reader and Professor of Engineering & Operations Management (Personal Chair) at the University of Queensland
- Director, Technology Management Centre, The University of Queensland

#### *Visiting Appointments*

Visiting Professor, IIT (Delhi and Kanpur)

Visiting Research Fellow, University of California (Berkeley)

Visiting Professor, George Washington University (Washington D.C.)

Visiting Professor, University of Southern California (Los Angeles)

Visiting Professor, University of Arizona (Tucson)

Visiting Professor, Norwegian University of Science and Technology (Trondheim)

Distinguished Visiting Professor, National University of Singapore (Singapore)

Visiting Professor, Eindhoven University of Technology

Visiting Professor, University of Abertay, Scotland

Visiting Professor, Technical University, Tampere, 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 regularly review papers for more than 20 other international journals.

I have served on the Advisory Boards for over 20 international conferences in reliability and technology management.

#### **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, 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, 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). The focus is on looking at problems in a framework that integrates technical, commercial and management issues.

I am involved in joint research with groups in Korea, Indonesia, Thailand, Singapore, Japan, Netherlands, Finland, Norway, Scotland, and the USA.

I have given several keynote lectures at various international conferences and given over 150 research seminars at universities around the world.

#### **6. Publications**

##### **A. Books and Book Chapters**

###### **Books**

Co-author	5
Co-editor	2

<b>Book Chapters</b>	20
<b>B. Conference Proceedings</b>	
Co-editor	4
<b>C. Special Issues of Journals</b>	
Co-editor	4
<b>D. Journal Publications</b>	
Published/Accepted for publication	147
Under Review	10
<b>E. Book Reviews</b>	1
<b>F. Conference Papers</b>	
Conferences in Australia	47
Conferences Overseas	82

### *Books*

**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)

**Warranty Cost Analysis** – WR Blischke and DNP Murthy, Marcel Dekker, New York, 1994 (pp 731 + xiii)

**Reliability Modelling, Prediction and Optimization** – WR Blischke and DNP Murthy, Wiley, New York, 2000 (pp 832 + xxvii)

**Weibull Models** – DNP Murthy, M Xie and R Jiang, Wiley, New York, 2003 (pp 395 +xvi)

**Warranty Management and Product Manufacture** –DNP Murthy and WR Blischke, Springer Verlag, 2007 (pp 301)

**Product Warranty Handbook** - WR Blischke and DNP Murthy [Editors], Marcel Dekker, New York, 1996 (pp 925 + xxiii)

**Case Studies in Reliability and Maintenance** - WR Blischke and DNP Murthy, Wiley, New York, 2002 (pp 661 + xxiii)

### *Book Chapters*

**Product Warranty Handbook** - WR Blischke and DNP Murthy [Editors], Marcel Dekker, New York, 1996

- Chapter 1: **Warranties: Concepts and Classification**  
(WR Blischke and DNP Murthy, pp 5 - 28)
- Chapter 3: **Framework for the Study of Warranty**

- (DNP Murthy and WR Blischke, pp 47 - 74)
- Chapter 6: **Modelling for the Study of Warranties**  
(DNP Murthy, pp 133 - 156)
- Chapter 14: **Two Dimensional Pro-rata and Combination Warranties**  
(RJ Wilson and DNP Murthy, pp 365 - 388)
- Chapter 21: **Warranty and Design**  
(DNP Murthy, pp 515 - 541)
- Chapter 23: **Warranty and Manufacturing**  
(DNP Murthy, pp 585 - 620)
- Chapter 24: **Warranty Servicing Strategies**  
(DNP Murthy, pp 621 - 653)
- Chapter 33: **Bibliography on Warranties**  
(I Djamaludin, DNP Murthy and WR Blischke,  
pp 839-916)

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 [Editors], Kluwer Academic Publishers, New York, 1997, pp 317-340.

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 [Editors], World Scientific, Singapore, 1998, pp 249 – 270.

DNP Murthy and WR Blischke: **Reliability and Warranty**, In **Handbook of Statistics [on Reliability]**, N Balakrishnan and CR Rao [Editors], North Holland, Amsterdam, 2001, pp

CD Lai, M Xie and DNP Murthy: **Bathtub Failure Rate**, in **Handbook of Statistics [on Reliability]**, N Balakrishnan and CR Rao [Editors], North Holland, Amsterdam, 2001, pp 69-106

DNP Murthy: **Maintenance Service Contracts**, in **Maintenance Modeling and Optimization: State-Of-The-Art**, M Ben-Daya [Editor], Kluwer Academic Publishers, Boston, 2000, pp 111-132

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 [Editors], Kluwer Academic Publishers New York, 2001, pp 289 - 324

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 [Editors], Kluwer Academic Publishers, New York, 2001, pp 325-360

DNP Murthy and N Jack: **Warranty and Maintenance**, in **Reliability Engineering Handbook**, H Pham [Editor], Springer-Verlag, London, 2002, pp 305-316

P Townson, DNP Murthy and H Gurgenci: **Optimisation of Dragline Load**, in **Case Studies in Reliability and Maintenance**, WR Blischke and DNP Murthy [Editors], Wiley, New York, 2002, pp

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

CD Lai, M Xie and DNP Murthy: **Weibull Distributions**, in **Springer Handbook of Engineering Statistics**, H. Pham [Editor], Springer-Verlag, London, 2005

DNP Murthy, J Baik, R Wilson and M Bulmer: **Two-dimensional Failure Models**, in **Springer Handbook of Engineering Statistics**, H. Pham [Editor], Springer-Verlag, London, 2005

### *Conference Proceedings*

**Stochastic Models in Engineering, Technology and Management** - DNP Murthy and S Osaki [Editors], World Scientific Publishers, 1993 (pp 612 + xiii)

**Stochastic Models in Engineering, Technology and Management** - RJ Wilson, DNP Murthy and S Osaki [Editors], The University of Queensland, 1996 (pp 663 + x)

**Reliability Modelling and Analysis** – M Xie and DNP Murthy [Editors], The National University of Singapore, 1998 (pp 168 + v)

**Stochastic Models in Engineering, Technology and Management** - RJ Wilson, S Osaki and DNP Murthy [Editors], The University of Queensland, 1999 (pp 563 + ix)

### *Special Issues Of Journals*

**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

**Reliability Modelling and Analysis**, M Xie and DNP Murthy [Guest Editors], *International Journal of Reliability, Quality and Safety Engineering*, v 6, n 3, 1999

**Stochastic Models in Engineering, Technology and Management**, RJ Wilson, S Osaki and DNP Murthy [Guest Editors], of *Mathematical and Computer Modelling*, v 31, n 10-12, 2000

**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

### *Journal Publications (Since 2000)\**

(\* A complete list of journal and conference publication will be provided on request.)

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. R Jiang DNP Murthy and P Ji, Study of n-fold multiplicative model, *Reliability Engineering & System Safety* **74** (2001), 211-219.
14. N Jack, BP Iskandar and DNP Murthy, Comments on "Maintenance Policy with two-dimensional warranty", *Reliability Engineering & System Safety* **82** (2001), 105-109
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. CS Kim, I Djamaludin and DNP Murthy, Warranty and discrete preventive maintenance, *Reliability Engineering & System Safety*, **84**, (2003) 301-309

24. N Jack and DNP Murthy, Warranty servicing and customer satisfaction, *IMA Journal on Management Mathematics*, **15**, (2004) 111-124
25. DNP Murthy, O Solem and T Roren, Product Warranty logistics: Issues and challenges, *Euro. Jr. Oper. Res.*, **156**, (2004), 110-126
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* (In print)
29. DNP Murthy, Maintenance of complex systems: Issues and Challenges, Accepted for publication
30. DNP Murthy, Product warranty and reliability, Accepted for publication
31. J Jaturnnatee, DNP Murthy and R Boodiskulchok, Optimal preventive maintenance of leased equipment, Accepted for publication in *EJOR*
32. T Osteras, DNP Murthy, M Rausand, Product performance and specification, Accepted for publication in the *Journal of Engineering Design*

## **6. Industry Consulting / Short Courses**

I have consulted for several businesses in Australia and overseas 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, Germany, Netherlands, England and the USA.