

## Department of Systems Engineering and Engineering Management

### Seminar Series

## Asset Management and Game Theoretic Models

### Prof. D.N.P. Murthy

Emeritus Professor, The University of Queensland, Brisbane, Australia

Date	16 March 2015 (Monday)
Time	10:30am (Tea/Coffee service at 10:15am)
Venue	Room P6921, 6/F, AC1

#### **Abstract**

Businesses need a variety of physical assets (such as products, plants or infrastructures) to produce their outputs (goods and services). Every asset degrades with age and usage and ultimately leads to failure. The effect of failure can have a significant impact on the performance of the business. Corrective maintenance actions are needed to restore failed asset to working condition whilst preventive maintenance actions are used for controlling the degradation of the asset and reduce the likelihood of failure. Traditionally, assets were purchased and maintained in-house. Assets have been getting costlier and the maintenance more complex. This has led to an increasing trend towards leasing and maintenance being outsourced.

Asset management requires making decisions between purchase versus lease (through a lease contract [LC]) and between in-house versus outsourcing of maintenance (through maintenance service contract [MSC]). MSC and LC are contracts that involve two or more parties. Each party has a different objective and actions of a party impact on others. Effective asset management needs to take into account these interactions. Game theory provides the most appropriate framework for evaluating alternate decision options and on deciding the optimal decisions for the different parties involved. The lecture will give an overview game-theoretic approach to decision making in the context of MSCs and LCs.

## **About the Speaker**

**Professor D. N. P. (Pra) Murthy**; School of Mechanical and Mining Engineering, The University of Queensland, Q 4072, Australia

Pra Murthy obtained B.E. and M.E. degrees from Jabalpur University and the Indian Institute of Science in India and M.S. and Ph.D. degrees from Harvard University. He has been with The University of Queensland since 1972 and has held various positions including the Director of Technology Management Centre and Professor of Engineering and Operations Management. From 2005 – 2009 he was Research Professor and since 2010 he is an Emeritus Professor. In addition, he has held visiting appointments at fifteen universities in the USA, Europe and Austral-Asia.

Pra's research in the past dealt with various topics in system theory, numerical methods, operations management and technology management. His current research interests include various topics in reliability, maintenance, warranties and service contracts. He has authored or coauthored 25 book chapters, 170 journal papers and 150 conference papers. He has co-authored and co-edited 3 books. Currently he is working on two books – the first on maintenance and the second on detection and management of warranty fraud.

Pra has been on the editorial boards of twelve international journals and has run short courses for industry on various topics in technology management, operations management and post-sale support in Australia, Asia, Europe and the USA. He has consulted for several businesses in Australia, Asia, Europe and the USA.

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***All are Welcome!***