

Applying Lean Manufacturing Principles in the Higher Education Sector

Michele CANO, Eileen O'NEILL

University of the West of Scotland Quality Centre, Scotland, United Kingdom
Michele.Cano@uws.ac.uk

Abstract

The purpose of this paper is to present the findings of a research project which aims to determine if and how lean manufacturing principles can be applied to the Higher Education sector. The research is based on a comparative qualitative analysis of literature and semi-structured interviews with those involved in lean implementation across a number of sectors including Higher Education. It is shown that while lean projects can be successful at a local level, a more strategic approach is required to ensure a culture for continuous improvement and full implementation of lean principles is achieved. Furthermore, critical success factors are identified at all levels of implementation. The practical implication of this work is to provide a framework which will help in the planning and implementation stages of applying lean manufacturing to the Higher Education Sector. The value of the work which this paper conveys is the presentation of a framework, informed by best practice and lessons learned in implementing lean manufacturing and which can be applied to the higher education sector.

Keywords: Lean practices, best practice, higher education

References:

- [1] Adnett N, 2010. The growth of international students and economic development, friend or foe? *Journal of Education Policy*, Vol 25, Iss 5, pp 625-637.
- [2] Askin, G. R, and Goldberg B. J, (2002). *Design and Analysis of Lean Production Systems*. New York: John Wiley & Sons.
- [3] Ballé M, Regnièr A, 2007, *Lean as a learning system in a hospital ward*, *Leadership in Health Service*, Vol 20 No.1, Emerald Group Publishing.
- [4] Balzer W.K., 2010. *Lean Higher Education: Increasing the Value and Performance of University Processes*, Productivity Press.
- [5] Bicheno J, Holweg M, 2009. *The Lean Tool Box: The essential guide to Lean transformation*, Piccie Books.
- [6] Breyfogle III, Forrest W, 1999, *Implementing SIX SIGMA: smarter solutions using statistical methods*, John Wiley & Sons, ISBN 0-471- 29659-7.
- [7] Cano M, MacArthur E, Kourouklis A, 2012, *Critical Success Factors for Implementing Lean thinking in Higher Education*, *The first Lean Six Sigma Conference for Higher Education*, Glasgow.
- [8] Cano M, Kobi A, 2011, *Evaluation of Continuous Improvement Approaches within the Scottish Manufacturing Sector*, *Toulon Verona Conference*, Alicante.
- [9] Comm, C.I. and Mathaisel, D.F.X., 2005, *A case in Applying Lean Sustainability Concepts to Universities*, *International Journal of Sustainability in Higher Education*, Vol. 6 No. 2, pp 134-146.
- [10] Deem R., Hillyard S, Reed M., 2007, *Knowledge, Higher education and the new Managerialism: the changing management of UK universities*, Oxford University Press.

- [11] Deem R., Mok K.H., Lukas L., 2008, Transforming Higher education in whose image? Exploring the concept of the 'world class' university in Europe and Asia, *Higher education Policy*, 21, pp 83-97.
- [12] Dill D.D., 2003, *Allowing the market to Rule: The case of the United States*, *Higher education Quarterly*, Vol 57 Issue 2, pp 136-157.
- [13] Feld, W.M (2001). *Lean Manufacturing: Tools, Techniques, and How to Use Them*. Washington, D.C: CRC Press.
- [14] Greenway D. & Haynes M., 2003, Funding Higher Education in the UK, The role of fees and loans, *The Economic Journal*, 113 (Feb.), F150-F166, Blackwell Publishing.
- [15] Grummell B., Devine D. & Lynch K., 2009, The care-less manager: gender, care and new managerialism in higher education, *Gender and Education*, 21:2, 191-208
- [16] Hines, P. and Taylor, D. (2000), *Going Lean: A Guide to Implementation*, Cardiff University, Cardiff.
- [17] Houston, D, 2008, Rethinking Quality and Improvement in Higher education, *Quality Assurance in Higher Education*, Vol 16, Iss, 1, pp. 61-79.
- [18] Kotter JP, 1999, *What Leaders Really Do*, Harvard Business Review book.
- [19] Liker JK, 2004, *The Toyota Way – 14 Management Principles from the World's Greatest Manufacturer*. McGraw-Hill Companies, USA, ISBN 0-07-139231-9.
- [20] Naslund D, 2008. Lean, Six Sigma and Lean Six Sigma: fads or real process improvement methods? *Business Process Management Journal*, Vol 14, No. 3, pp. 269-287.
- [21] Novak, S., 2006. *The small manufacturer's Toolkit: A guide to selecting the Techniques and systems to help you win*, Boca Raton: CRC Press.
- [22] Ortiz, C.A., 2008. *Lessons from a Lean Consultant; Avoiding Lean Implementation Failures on the Shop Floor*. Boston, MA: Pearson Education, Inc.
- [23] Page, J., 2004. *Implementing Lean Manufacturing Techniques: Making your System Lean and Living with It*. Cincinnati: Hanser Gardner Publications.
- [24] Santos J., Wysk R., & Torres, J.M., 2006. *Improving Production with Lean Thinking*. New Jersey: John Wiley & Sons, Inc.
- [25] Scherrer-Rathje, M., Boyle, T.A., and Deflorrin, P., 2009, Lean take two! Reflections from the second attempt at lean implementation, *Business Horizons*, pp. 52, 79-88.
- [26] Schofield C., Cotton D., Gresty K., Kneale P. & Winter J., 2013. Higher education provision in a crowded marketplace, *Journal of Higher Education Policy and Management*, 35:2, 193-205.
- [27] Srikanthan G. & Dalrymple J.F., 2002, Developing a Holistic Model for Quality in Higher Education, *Quality in Higher Education*, 8:3, 215-224.