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Sustaining Lean in New Zealand Manufacturing Organisations

A thesis presented in partial fulfilment of the requirements for the degree of Master of Technology in Engineering and Industrial Management at Massey University, Palmerston North, New Zealand

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2009
Abstract

This study has focused on the NZ manufacturing sector. The weak productivity rates of this sector over the last few years prompted the Government (through New Zealand Trade and Enterprise) to take steps to help manufacturers’ boost productivity growth through a directed campaign to apply lean manufacturing. Several high-growth potential companies were selected to participate in NZTE’s Aichi lean programme which ran from 2005 through to 2008. Several companies also joined NZTE’s current Direct lean programme which kicked-off in 2007. Overseas experience shows that a majority of organisations attempting lean transformations fail to sustain improvements. This study looked at the experiences of a sample of organisations that participated in NZTE’s Lean Programme in sustaining their lean transformations.

This study utilised case study research techniques to extract qualitative data from nine manufacturing companies. Eleven organisations were originally selected for study but two companies went into receivership prior to the commencement of data collection. The organisations were assessed for lean sustainability using a recognised sustainability model. In general, lean improvements were not sustained across NZ manufacturing organisations. NZTE’s Lean Programmes were successful in promoting lean but proved poor in ensuring sustained improvements. Only one case study organisation looked likely to sustain improvements. There were several common problems experienced by the organisations. These problems were; erroneous understanding of lean, poor change strategy, poor SMT commitment, NZTE funding ‘pushing’ change, high staff turnover, high staff resistance and failure to develop the lean champion’s capabilities.

The root-cause of these problems was lack of organisational leadership. The majority of the leaders chose to attempt lean simply as a tool for short-term gains. Many organisations experienced good initial gains from implementing lean but the majority failed to sustain these improvements. Overseas experience shows that to sustain improvements organisations need to focus on and invest into life-long learning. This study showed that there is a distinct lack of focus on learning within the sample. It is recommended that the 5P model be used as a guide to creating learning organisations within NZ. The 5P model has been developed from the 4P model (Liker 2004) which
is based on the philosophies and principles used by Toyota to become a learning organisation. The 5P’s are Preparedness, Philosophy, Process, People and Partners and Problem Solving. Organisations first establish their strengths and weaknesses through a period of preparedness. The next step is to establish a long-term philosophy to enable the successful roll-out of the other P’s. Process improvements provide the setting in which to challenge and develop people, which is necessary to achieve a true learning organisation focused on continuous improvement through problem solving.
Acknowledgements

I undertook this project for professional development, to fulfil a long-term personal goal and most importantly a new challenge. This project has not only fulfilled all these aims, it has been my toughest assignment to date. I have not only gained a valuable qualification and achieved my personal goals; this project has changed my thinking forever. I would like to express my sincere gratitude to several persons both in my personal and professional life for making this journey possible.

Firstly to my chief supervisor, Dr Jane Goodyer, thanks for being an excellent Sensei and striving to extract nothing but the best out of me. Thanks to Dr Nigel Grigg, my co-supervisor for all his guidance especially with the intricacies of doing qualitative research. A special thanks to Dr Juliana Mansvelt for helping mould the research framework with her expert guidance.

I am grateful to NZTE for funding this project and providing ease of access to the case study organisations. My gratitude goes to the case study organisations for opening their doors to our scrutiny and the two pilot companies for their assistance.

Finally, huge thanks to my family and friends for their support and understanding especially through the challenging times. I am forever grateful to my wife for her endless patience and words of encouragement and comfort. Thanks also for the many hours of proof-reading.
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Lack of SMT commitment to change

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<tr>
<td>BBD</td>
<td>Better-by-Design (an NZTE initiative)</td>
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<td>BOD</td>
<td>Board of Directors</td>
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<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
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<td>CI</td>
<td>Continuous Improvement</td>
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<td>DOL</td>
<td>Department of Labour</td>
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<td>EFQM</td>
<td>The European Foundation for Quality Management</td>
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<td>EQA</td>
<td>European Qualifications Authority</td>
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<td>GM</td>
<td>General Manager</td>
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<td>ISO</td>
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<td>KL</td>
<td>Key Leaders</td>
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<td>KPI</td>
<td>Key Performance Indicator</td>
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<td>LMS</td>
<td>Lean Management System</td>
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<td>MBNA</td>
<td>Malcolm Baldridge National Award</td>
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<td>MED</td>
<td>Ministry of Economic Development</td>
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<td>MM</td>
<td>Manufacturing Manager</td>
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<td>NZTE</td>
<td>New Zealand Trade and Enterprise</td>
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<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
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<td>OFI</td>
<td>Opportunities for Improvement</td>
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<td>OM</td>
<td>Operations Manager</td>
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<td>Process Improvement Team</td>
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