



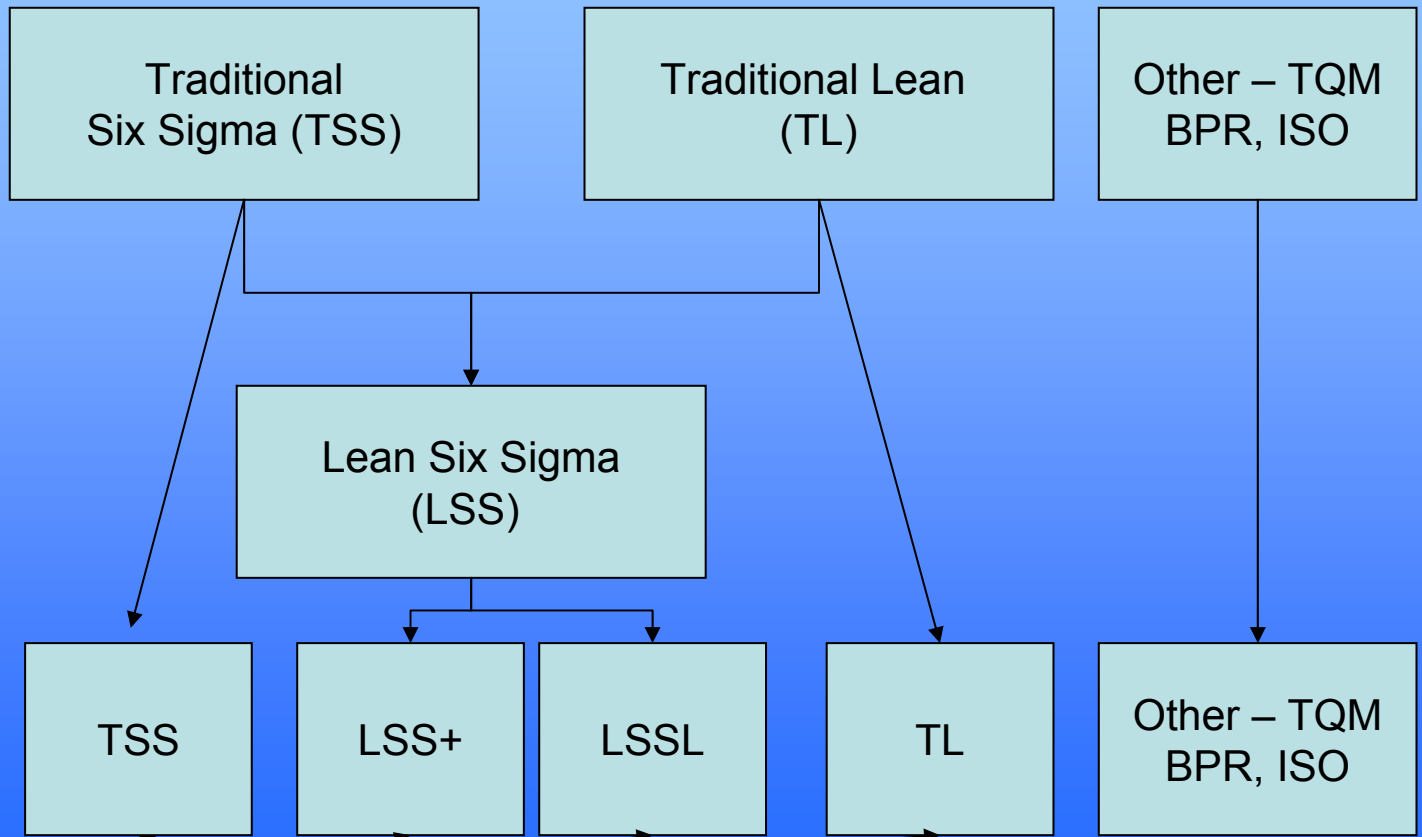
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1. Deployment Strategies for Lean Six Sigma
2. Factors critical to successful deployment
 - Using Australian Case Studies
 - Action research evidence
 - Empirical evidence



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Academic Empirical Evidence
Antony (2002..200



Mader (2008), Quality Progress



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Common factors critical to a successful deployment

1. Leadership commitment
2. Continuous improvement culture
3. Competency based training
4. Effective teams
5. Effective measurement systems



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TSS: Motorola's original Six Sigma model including Design for Six Sigma following DMAIC or IDDOV

TL: Toyota Production System model – 5S, Visual workplace, Preventive maintenance, Value Stream mapping, setup reduction etc.

LSS+: Objective is about the flow of work rather than quality, uses DMAIC and I phase uses more lean tools

LSSL: Lean focus with a simpler set of statistical tools, project cycle time is smaller



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Transaction & Services specifically

1. Cross functional project teams trained together as a team
2. More time between weeks of formal training to support project work
3. The need to be more flexible and less rigidity especially at the infrastructure and tool level



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SME's specifically

1. Every single project has to contribute positively to the bottom-line.
2. Projects need to be closely tracked
3. A training program to ensure cultural uptake
4. Only needs one Black belt
5. An understanding of process management strategies
6. Use of consulting services that are modular in form
7. Adjust Six Sigma to ISO9001/2000 to allow automatic certification



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Case 1: SME Manufacturer – Action Research (LSSL)

1. 75 on staff, automotive first tier supplier
2. Deployed Lean over 2 years with DMAIC projects recently added
3. Trained 13 team leaders to the equivalent of Yellow belt level
4. Interviewed Operations Manager – passionate about improvements and expects the same of his senior staff; is coach and mentor to the team leaders through the 2 group leaders
5. Key driver is international competition and the continual need to push costs down and transfer margins to customers
6. Continuous improvement is part of the company culture through push by Automotive customers
7. Chosen not to employ “Belts” as they are too “theoretical” as stated by the Ops Manager and need to be in the line management functions (not pissing into the tent from outside)



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Case 2: Hospital – Questionnaire analysis (LSSL)

1. 120 staff, Deployed DMAIC awareness training to middle management only
2. Key driver is government funding - If KPI's are improving then there is more money
3. Sent a questionnaire to 18 senior staff asking them to rank factors that could be a measure of a successful deployment of DMAIC – the performance measure was timely, accurate and equitable access to outpatients. The factor critical were as follows:
4. **Open organization - Statistically significant**
5. An open, trusting organizational culture is necessary for the hospital?; Frequent use of cross-departmental and empowered teams is important?
6. **Planning and values – not statistically significant**
7. Written quality values and/or mission statements are important? Aligning hospitals goals with staff development and actions is critical?
8. **Training – statistically significant**
9. Training in Quality principles is important?; Training in problem solving skills is important? Training in teamwork facilitation, structure and action is important?

General awareness training in performance improvement methodologies is important?



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Case 3: Multinational Manufacturer – Action Research (LSSL)

1. 120 being trained to yellow belt; 3 green belts
2. Previous history of quality improvement strategies
3. 5S implemented but faded away
4. Leveraged off many past programs
5. Using Lean with DMAIC projects
6. External trainers
7. Key driver international competition
8. Performance and share price extremely good because of Mining industry is major customer
9. Lean and DMAIC Training is funded via Government program



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Case 4: Bank – semi structured interviews (LSSL)

1. 1000's on staff; Green belts trained in there 100's using a bootcamp philosophy, large number of BB and a number of MBB as coaches
2. Significant investment in training but significant savings and reduced costs
3. Drivers were
 - Six Sigma was combined with Lean since latter could not solve all problems and large-scale change program and perceived over-dependence on consultants for process improvement
 - The engagement model of forcing most Bootcamp attendees to have a viable project ready to commence before training is completed has greatly assisted in the overall success
4. High touch coaching model was key to the knowledge uptake of the project teams and success generally.
5. A mandate the completion of a standard 14 week project before considering candidates for Green Belt training, and insist on Green Belt Certification before Black Belt training. There have been a few exceptions to this model, and we have seen less effectiveness of the trained team members in terms of number and success rate of projects than in the mainstream model
6. The most important success factor is the practice of committing staff and sponsors upfront to the full project and having them demonstrate their commitment through investment in training and project time



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Case 5: Multinational Manufacturer - semi structured interviews (TSS)

1. Large presence of “belts”
2. Training suppliers
3. Ex GE MBB facilitating program
4. TSS deemed to be a competitive advantage
5. Leveraged off BPR and TQM



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Case 6: SME Manufacturer - semi structured interviews (LSSL)

1. Key driver was key supplier – do it or else!!
2. Green belt facilitator
3. Leveraged off TQM
4. Training costs were restrictive
5. Recognition and reward process was active
6. Cannot afford to pick the wrong projects
7. Voice of the customer super critical



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Conclusions/Insights

1. LSSL used for all but one cases
2. DMAIC prevalent no matter what industry, model
3. There are common factors critical to success
4. Belt infrastructure more prevalent in larger organizations
5. Training costs higher in larger organizations
6. Critical success factors vary for SME's and for Transactions and services
7. Recognition systems assist successful deployment
8. Coaching a good follow up to training
9. There is a variation in the training & assessment of Lean Sigma experts by training providers