

## Top Ten Success Factors for Lean Six Sigma

by Matt Moore – OneSixSigma.com

New research has identified the success factors critical to the success of a lean six sigma deployment, and the ones that make a difference between partial and complete success. The research also examined tool use in



projects, and evaluated which tools were best understood, and which ones had most impact in projects. In finding that there is a link between understanding and impact, and that tool understanding is mixed, the analysis highlights the fact that the greater understanding of the tool, the greater the impact. This affects the success of a programme in many ways, not least because if there is a lack of understanding about a tool, then it is unlikely to be used, despite the fact that it may well be the most appropriate and effective. Furthermore, the level of management commitment is adversely affected by a lack of tool and technique understanding, and therefore for greater executive buy-in, management must have knowledge of the tools and techniques available.

SigmaPro, a global provider of lean six sigma training, software, consultancy services, and deployment support, teamed up with the Aston Business School, one of the top business teaching & research institutions in the UK, to carry out research into the success factors involved in business improvement programmes, and also looked at which tools work, and why in real projects. In doing so, the research identified the tools that work best in practice.

“Most Six Sigma and Lean training is based around thinking from 20 years ago based on successes in Motorola and GE. We wanted to take an up to the minute look at what makes a successful programme today” says Chris Rees, Director of UK Operations for SigmaPro.

Commissioned as part of Sigmapro’s continual improvement process for their lean six sigma training material and deployment support, the research looked to find out what makes a successful improvement programme. It compared the responses of improvement practitioners, including Black Belts and Master Black Belts with general management and Green Belts in order to gauge the impact that increased technical knowledge has on project success, and the tools that are most effective in gaining that success.

“As the use of the lean six sigma methodology and tools are growing quickly, researching its success factors is important to make sure that lean six sigma is not misused and so continues to have a high positive impact.” says Mike Titchen, Master Black Belt at Sigmapro and part of the research team who collated the data and analysed it using lean six sigma tools and techniques.

### Success Factors Important for a Successful Deployment

1. The root causes of the problems should be addressed, not the symptoms of them.
2. It is the responsibility of everyone in the organisation to ensure that quality is built in at the source.
3. An environment must be developed that encourages the constant improvement of products and services
4. Defective products and services must be considered as unacceptable
5. The customer requirements must be fully understood to be able to provide good quality.
6. All people in the organisation are responsible for quality improvement
7. Leadership and resource needs to be given by top management
8. Data must be used to support and verify the success of the improvement initiative
9. Customer satisfaction is a critical measure for business improvement
10. Resistance to change must be actively managed

Dr Ben Clegg of Aston Business School thinks that, “lean six sigma practice has enormous potential to improve business performance. How the training of professionals in tools and success factors takes place, and the implementation of these in practice, is currently an under researched area. It should be a concern of all leading researchers and training organisations in this area to ensure that it is performed correctly in order to maximise its impact”.

The first part of the research asked respondents to rank a list of 30 success factor statements sourced from various respected 'gurus', such as Deming, Ishikawa, Crosby and Feigenbaum. Respondents were asked to rate each statement for its importance to a programme generally, and from there whether they believed it had been implemented successfully in their organisation.

**Best Understood Tools  
BBs / MBBs**

1. 5 Whys
2. Fishbone
3. Pareto
4. 5S
5. Measles Chart

**Best Understood Tools  
Non-Experts**

1. Brainstorming
2. KPI
3. Process Mapping
4. Basic Statistics
5. Gantt Chart

**Tools considered most  
effective – BBs / MBBs**

1. Process Layout
2. Visual Management
3. What, Where, When, etc.
4. CTQ Trees
5. Process Mapping

**Tools considered most  
effective – Mgmt / GBs**

1. Process Mapping
2. KPI
3. Poka Yoke
4. Best Practise
5. Brain Storming

Of those surveyed 25.6% of respondents reported complete success with their change programme, whilst 73.1% said it was a partial success. Interestingly, it transpired that general management – the sponsors of the programmes - are much more likely to describe the deployments as a complete success than those working within the programmes. This comes as no surprise to Mike Titchen.

“I think practitioners are more critical, and focus not only on how well the deployment is accepted, but also on how well their internal processes are working (eg project selection, review sessions, BB development etc)” he says. “Sponsors, on the other hand, are happy to see positive results, and focus less on the process side.”

The successful implementation of the factors would also appear to be directly related to the programme participant’s belief in its importance, with eight of the top ten factors deemed critical to success also appearing in the top ten of those most successfully implemented. This is evidence that buy-in from all the participants in the programme is heavily influential on its success, regardless of the technical tools and techniques available.

To Mike, this shows the importance of Change Management. “When the General Electric heuristic for making initiatives work -  $E = Q \times A$  (Effectiveness of the programme is a function of its Technical Quality times its Cultural Acceptance) - is considered, it can be seen that there is a fairly even split between cultural and technical factors. This implies that the people aspects of any improvement programme are as important as the technical tools and techniques used. This is why we at SigmaPro spend a lot of time in our Training on Change Management.”

The second part of the research dealt with specific tools and their impact on deployment success. Respondents were asked to rate 77 lean six sigma tools in terms of their own understanding of them, and then in terms of the impact the tools had on a successful programme. In finding a strong correlation between the understanding of the tool and its perceived success, the research shows that as the advanced tools are considered more effective, it is vital that management should have at least basic awareness training in them in order to appreciate their impact.



Unfortunately, it seems that this rarely happens. “In my experience, they are often reluctant to do this,” says Mike. “And this has a significant negative impact on initiative success.” One worrying result of the research is the apparent fact that more often than not, the urgency of a project determines the selection of tools: the more urgent a project, the more likely a simple tool tends to be used, even if it is not the most appropriate or effective.

SigmaPro have already begun to incorporate the results of the research into their training material. If you have any questions regarding the article, please do not hesitate to contact us.