Lean Coaching Principles: Using Lean Six Sigma and Coaching to Improve the Quality of Outputs

Gail Rowles, Head of Business Process, Outputs and Quality Improvements (BPOQI)
Alison Pattimore, Head of ONS Coaching

**UK Office for National Statistics**

Abstract

Slick, efficient, robust business processes are vital to the delivery of trusted, reliable, quality statistics. Continuous improvement is an Office for National Statistics (ONS) key objective. Across ONS reviews are carried out for business process steps from data input to the publication of the final statistical output using Lean Six Sigma processes and principles. With identification of non-essential, non-value-added steps within the production cycle, improvements are recommended and implemented, waste is significantly reduced and the quality of the output improved.

Experience has shown that a positive attitude and commitment of staff is vital for the successful implementation of improvements. For example, when reviewing an end to end business process one team embraced the recommendations and improvements put forward. However, the team receiving their output data as inputs were negative and committed to the ‘it’s always been done this way approach’. This negative behaviour delayed progress as it had to be overcome before the improvements could be made.

The paper gives an overview of the processes undertaken to date, the successes encountered and the obstacles that have been overcome. It will detail the author’s thoughts for the future of combining the Lean Six Sigma toolkit with a coaching model.

# Introduction

There is a continuing need among ONS UK and international customers for good quality statistics, which help them understand the changes taking place in the UK. This places a responsibility on ONS to set and maintain standards of quality and trustworthiness in their statistics. ONS has always been committed to providing good quality statistics and has focused on the quality of the data produced by using robust methodologies, sources and procedures.

The UK Civil Service Reform requires government departments to be more innovative and efficient in its service delivery. The introduction of the ONS strategy 2013 – 2023 places emphasis on quality and value for money. To this end ONS introduced several new principles one of which is “*we put quality first*” to underpin our commitment to the ONS vision. [[[1]](#footnote-1)][[[2]](#footnote-2)]

This new emphasis requires us to think differently about how we continue to produce relevant quality statistics efficiently and work towards meeting one of ONS strategic aims, “have flexible and efficient processes and systems for statistical production, underpinned by sound methodology”. This has motivated us to introduce initiatives that enable us to:

Robustly review our processes

Consider how we engage our people and customers, both external and internal

Encourage staff to take ownership, share their experience and work collaboratively

To achieve this ONS are using the Lean Six Sigma (LSS) toolkit to produce value for money statistics combined with the coaching model to influence the behavioural culture.

This paper details how the ONS coaching model and LSS toolkit have been used together to review existing processes, obtain buy-in from staff and introduce new improved quality assurance processes that fit with ONS quality management strategy which has three quality goals:

To use Quality Management to encourage and promote a culture of continuous improvement through self-assessment and quality reviews

To produce relevant outputs with up-to-date metadata

To produce standardised outputs.

# Background to LSS

The LSS toolkit is the combination of two methodologies; Lean and Six Sigma. These have their roots in manufacturing but they can be applied to all aspects of an organisation, from product development and provision through administration and finance to customer services and support.

The Lean methodology was originally developed within the Automotive Industry, derived mostly from the Toyota Production System, it is a set of principles, practices and tools aimed at creating customer value.

Lean enables the creation of high quality, defect free products and services at all stages of the customer experience. It classifies every activity into one of the following categories:

Value Add - activities a customer would be willing to pay for;

Non Value Add**,** but essential, - things that need to be done but that don’t bring value to the finished item; and

Waste – actions that bring no value to the article and are therefore unnecessary. By removing waste the process not only gets faster but focuses on what the customer wants.

The Six Sigma methodology was developed by Motorola and is highly disciplined and structured. It aims to deliver near perfect products and services by analysing them to discover where and how defects occur, measure them and eliminate the problem areas. The focus of the process is to remove the variation within a process using statistical analysis tools with improvements being implemented in a systematic way.

Six sigma principles are to understand the critical to quality requirements (CTQs) of customers and stakeholders and understand the processes ensuring they reflect the CTQs. It is important to manage by fact and not make assumptions, involving and equiping people in the process. This is important and links with coaching where the techniques to equip, build confidence to challenge and not make assumptions has proved successful.

Benefits that can be recognised from using combined Lean and Six Sigma methodologies include cost reduction, shorter cycle times, improved customer service, greater employee productivity and increased profit margins.

LSS was first introduced into ONS in March 2011; the initiative was to explore whether a formal framework, such as LSS, would help the business to improve its processes. It was recommended that this was a toolkit that would benefit ONS and should become part of our change toolkit.[[[3]](#footnote-3)]

# Coaching

Coaching has been growing in popularity as a development intervention for many years. The European Council for Coaching and Mentoring introduced a framework to ensure that the practice of coaching is seen as a skill that requires continual professional development. Its supporting competency framework ensures standards are maintained and best practice is shared across the wider coaching communities.

Coaching can be used in a number of ways eg:

Executive and professional coaching (assisting those who have strategic responsibilities within organisations);

Team coaching (adopting a coaching approach to team collaboration), coaching for performance (one-to-one interventions); and

Manager as coach (aimed specifically at upskilling managers to adopt a coaching approach).

ONS was a typical Civil Service department whose historical culture could best be described as “Command and Control” i.e. those at the top tell their subordinates what to do.

In a command and control culture employees tend to focus on what they needed to do i.e. the task, rather than considering how they might do things differently. This means that “what” was seen as a priority rather than “how”. As a result people became entrenched in their views and the environment made it difficult to bring about change.

ONS People Survey results (an annual Civil Service wide engagement survey) also indicated that employees felt we did not:

Introduce change well;

Seek their views before decisions were made; and

Provide feedback to improve performance.

It was recognised that to achieve our strategic aim of *developing an engaged and motivated workforce* we needed to find an initiative that sought to change behaviours and would dovetail with other initiatives like LSS that primarily provided a toolkit to review processes. This was seen as beneficial when carrying out quality reviews.

# Using LSS within National Accounts

Following an organisational restructure and the necessity to merge branches a project was initiated to ensure that the new structure would be: efficient; produce quality outputs; and allow continuous improvement to be embedded into the national accounts.

Using the LSS toolkit and assessing the *as-is* process areas for improvement were identified and prioritised. Reviews were undertaken by the Business Process, Output and Quality Improvement branch (BPOQI) and not by the operational branches. The benefit of having the review carried out by a team that was not involved in the day-to-day operational tasks was the ability to stand back, analyse and challenge the processes undertaken.

Initially getting buy-in from staff was difficult; they anticipated the reviews would mean efficiency savings and reduction in resource. Being honest, challenging current processes (coaching tools) and working with the teams to identify improvements to working practices, thus raising the quality of the output, trust and integrity was established.

The initial stage was to develop a process map for the existing operation, this was achieved by getting the review team and the operational delivery teams together to capture this information. Any issues/concerns held by the operational team were captured in these sessions and the information was used to identify improvements.

After these sessions a visio diagram of the captured process and a list of issues/concerns and recommendations was produced and given to the operational team for them to check. When the team signed off the process map follow up sessions were held to capture the time taken for each step of the process. This approach reassured the teams that their concerns had been listened to and when action was taken it confirmed that their input was valued.

Using these techniques areas of weakness and inconsistency were identified in approaches, remedial actions were then recommended and system owners implemented changes.

When using LSS the process must be owned and actively managed. Good communication is vital and buy-in from stakeholders is a necessity. It is important to identify people who are key to the success of the project and consult with them and provide them with regular feedback on progress.

# Coaching at ONS

Having recognised the need to raise the profile of *how* we do things rather than just *what* ONS decided to create a coaching culture that would:

Improve engagement levels by giving individuals a voice;

Encourage openness and honesty in order to improve our ability to influence and challenge; and

Give confidence to regularly provide feedback to recognise success and reinforce the positive behaviour we wanted and to help others develop.

To develop a *whole* organisation culture we would not differentiate between grades, professions or roles; our aim was to equip everyone with the same tools to develop a common language and approach. We wanted to give everyone the chance to develop their full potential; this was our first step in moving away from command and control.

Through a tender process Warren Lownds Limited were selected as the providers as their product centred on a toolkit that could be used for all employees and their message was about developing collaborative working environments where we learn from each other. Their Vanilla concept model was based on organisations where people in the organisation became facilitators and a coaching toolkit was rolled out within the organisation. This appealed to ONS as we wanted to pursue our desire to empower our own people and develop their potential.

Coaching for confidence was introduced to ONS in 2010 via Business Data Division (BDD) (a large operational unit of 500 employees, 300 of whom were clerical staff) responsible for data collection. Six in-house facilitators trained 500 employees within 3 months. This flood approach was aimed at creating the momentum to kick start the required culture change. The Senior Management team of BDD were the first team to be exposed to the toolkit, which helped to show staff that there was senior support for the initiative and it gave ownership of embedding the culture to the senior team. The ONS model introduced the role of coaching advocates to assist embedding.

Following the roll out BDD saw a marked improvement in their people survey results particularly in the areas that coaching aimed to target i.e. their views were sought, change was better implemented, feedback was more readily given. They found employees were more receptive to change – this was particularly helpful in the embedding of a recent restructure. Prior to coaching staff had been reluctant to work in a newly formed area but as they were encouraged to shape the roles and provide feedback on the processes integration with other areas improved and attention turned to the quality of their output rather than the task they had to do.

Due to the success in BDD ONS adopted the programme for the whole organisation and from January 2011 to September 2013 85% of the organisation attended a coaching event led by an ONS facilitator.

During this period links were forged between ONS coaching, LSS and the ONS Quality Framework in recognition of the fact that all three initiatives are key components to help ONS become a high performing team.

# Background to Quality Assurance using LSS and Coaching

ONS has always been committed to providing good quality statistics, focused on data quality ,robust methodologies and the reduction of errors; identification of any deviation from this is taken very seriously. To ensure that national accounts meets these criteria, delivers to the ONS strategic aim and adopts the ONS principles senior management gave direction for a review of the process to be undertaken. They agreed that all processes within national accounts would be assessed, with the initial focus being the quality assurance process, to ensure that robust, consistent checks were being carried out. In addition this work was to link into the new ONS quality management strategy and each areas quality assurance plan should be robust and use a standardised approach.

The aim being for every branch to undertake this process and consistent checks carried out across all branches. Each branch would fill out their plan for each statistical production round.

To meet the specified requirements and ensure that the correct focus was being given to the quality aspect an action plan of required work to review the processes was developed. Recognising the success of the continuous improvement work previously carried out by the BPOQI branch the team they were central to leading the work across the four national accounts divisions. The action plan specified that BPOQI would use the LSS toolkit (which they had previously used) and, recognising that buy-in from staff was imperative for the success of this review, this toolkit would be combined with the coaching model. Coaching had been introduced and used across the office but this would be the pilot for combining LSS and coaching. The ONS quality centre would be available to provide guidance and pilot areas were identified; Gross Capital Formation, Construction, Household Income and Gross Domestic Product (second estimate and quarterly national accounts).

Prior to undertaking this work, realising to be successful it was essential that the four national accounts divisions worked together, all national account branch heads were informed of the proposals and their opinions and buy-in sought. Planning for communication and getting buying was based around the *coach* model:

**C**ircumstance, explanation of what we are dealing with

**O**utcome that is needed

**A**pproach, the best way to meet the objective and availability of the operational delivery team

**C**ourse of Action, has the agreed approach been carried out?

**H**ealthcheck, have we undertaken regular reviews?

The BPOQI branch worked with each of the pilot areas using LSS principles, produced process maps, identified issues and concerns and highlighted where quality assurance should be carried out. This process only worked because of the buy-in of the branches and the change in culture that the coaching tools helped us achieve. Staff knew how to feedback and give their input, realising that something small that was important to them could have a huge impact on the overall process, they felt empowered to give their input and staff motivation and sense of worth improved.

It took several iterations working with the teams to obtain the ultimate process map. Once the teams were happy with the map we focused on their quality assurance process. We tackled the issue of timing, working back from the day of delivery to determine at what point in the round each of the quality activities should take place and how long each would take. When this was finalised each high level quality assurance step was broken down into lower activities, this in depth detail was required for the quality assurance plan.

The specification given for the quality assurance plan, to be robust and use a standardised approach, was exceeded as the developed quality assurance template also provided the ability for early identification of processes that were falling behind which would result in the final quality checks being squeezed.

Upon completion of the statistical production process map the quality checks detail was used to complete quality assurance plans using a standardised template. The Deputy Director (DD) and branch head met to categorise each of the low level steps and classify them as either essential (this check is key and must be carried out) or desirable (this should be carried out but not a mandatory check) and also record the expected day of the round that the allocated task would take place. When agreement was reached the DD signed of the plan as fit for use, the branch then completed the plan for each statistical production round. The template for the quality assurance plan was created as an excel spreadsheet and programmed to automatically give a status of red or green for each of the quality assurance steps; this is determined by the response from the team completing the checks to confirm if they have been completed and to time by entering Yes or No.

At the end of the round the plan is handed over to the DD for final sign off of data and there is clarity of the decisions made during the process, thus giving increased confidence in the data.

During discussions it was identified that the quality assurance process would be more robust if some of the quality checks were automated. BPOQI identified, whilst undertaking process mapping with the teams, that some branches had developed tools to carry out some of the tasks but others were still carrying out the same tasks manually. BPOQI shared this information with the teams and initiated communicating and sharing. Having one team (BPOQI) look at the quality assurance process across national accounts has identified similar process and helped eliminated the silo working mentality and allowed identification of good practice.

Additional benefits to the national accounts quality assurance procedures has been gained from speaking to other areas of ONS. For example Census division had developed many tools to assist with the quality assurance of census data and have suggested improvements for the national accounts quality assurance tools.

National accounts have now developed their own quality management strategy which supports ONS quality management strategy. This has been shared with national accounts staff and the quality centre and they have all bought into this strategy feeling that they now have a clear picture of what we are striving together to achieve.

# Summary of other ONS successes using these principles

There have been several successful initiatives using LSS and Coaching carried out in national accounts. These include:

Standardisation of the publication process across the division. A workshop identified that branches were using different approaches to the publication process. Working with the teams to identify value added, non value added and waste a standardised process was developed. Staff bought in to the new process as they had given input to what mattered to them.

Merging of branches, reviewing their processes and timings to eliminate peaks and troughs in work and improve the quality of the outputs being produced. There was no staff reduction as a result of this exercise but the quality of output and job satisfaction and morale for staff was improved.

Reviewing quality checks carried out by branches and the quality checks carried out by their national accounts feeder branches to eliminate duplication of effort.

Process map the national accounts Blue and Pink Book process. Every year a timetable is produced and the teams work to this. This year the Blue Book will include changes to meet European System of Accounts 2010 requirements. These changes and Blue Book compilation are taking place in parallel. By process mapping these processes it enabled early identification of potential risks and contingency to be built into the overall process. This work has been recognised as being really worthwhile and it is intended to carry out this process for all future Blue Books.

In those areas that embraced the coaching approach and actively sought to embed the tools and techniques there was clear evidence of increased engagement.

It was also acknowledged that meetings have become more productive and efficient. This was achieved by using the COACH model to ensure objectives and options were fully explored before solutions were adopted which has encouraged a “right first time” approach to our work and avoided revisiting issues due to lack of clarity in terms of both objective and ownership.

The SKILLS LINE model has also been seen as a key tool for improving the quality of outcomes. The model encourages the need for active listening, robust questioning to gain insight and identification of objectives before solutions are sought.

The COACH and SKILLS LINE models sit well with the Lean Six Sigma approach of basing decisions on facts and not assumptions.

In summary, the organisation provided us with two toolkits i.e. Lean and Coaching, to be used to assist employees in achieving some of our strategic aims which are:

Have skilled and motivated people who are enthusiastic for change;

Have flexible and efficient processes and systems for statistical production, underpinned by sound methodology; and

Improve quality and minimise the risk of errors.

BPOQI and national accounts made full use of the toolkits to successfully:

engage our people in the review process ensuring they had a voice which helped to secure their buy-in to the changes. This has historically been difficult to achieve in a command and control environment and heralded the start of culture change for us. We have since observed an increase in motivation and desire for change as people realise that they can influence change;

systematically review processes and base our decision on facts, which has increased our ability to influence our stakeholders with concrete evidence. This has increased the pace of change; and

communicate our objectives clearly to a wider stakeholder group and collaborate with them to ensure any changes took account of their needs and therefore maintained or improved quality.

# Next Steps

The pilot for the national accounts quality assurance process was scheduled to be completed by the end of March 2014; this was completed early and proved to be successful. This process will now be rolled out across all of national accounts and work with other national accounts branches is currently being undertaken.

Once the national accounts quality assurance process is complete it is intended to roll this out across ONS, the skills and tools developed will be shared across the office.

Recognising the success of combining LSS and coaching tools the aim is to continue to use these in our continuous improvement activities.

Lean Principles:

Focus on the customer –understand their perception of value

Identify and understand how the work gets done – the value stream

Manage improve and smooth the process flow

Remove non-value-add steps and waste

Manage by fact and reduce variation

Involve and equip the people in the process

Undertake improvement activity in a systematic way

Six Sigma Principles:

Understand the CTQs of our customers and stakeholders

Understand our processes ensuring they reflect these CTQs

Manage by fact

Involve and equip the people in the process

Undertake improvement activity in a systematic way

Coaching Tools:

COACH – To set clear objectives, gaining agreement on this from all parties

Skills Line – To ensure all parties are clear on objectives and their role in achieving it and to help people think about how and why they undertake tasks, not just what they do. To encourage managers not to tell but to encourage individuals to take ownership of their decisions

Communication Preferences – Help us adapt our style to suit our customers. Encourages flexibility in responding to change and helps build efficient relationships.

To encourage adaptability of communication, building relationships bases on respect

Skills Line –SEEDS – to help give effective feedback to engage and motivate

3 Rs – To meet individuals on their level and understand what motivates them.

Transferable Skills – To help understand and identify potential

Without the aid of the coaching toolkit it is doubtful that we would have built up such robust relationships that have helped success so far. In having the common language all participants recognised the need to be more adaptable and responsive to the needs of others, which helped improved mutually beneficial outcomes thus improving motivation.

We anticipate that going forward the foundations have been laid to make continuous improvement acceptable as people will be more receptive to change.

1. ONS strategy 2013 – 2023, The Office for National Statistics, UK [↑](#footnote-ref-1)
2. ] Vision and Objectives, Office for National Statistics, UK Official Website; http://www.ons.gov.uk/ons/about-ons/who-ons-are/programmes-and-projects/enhancing-access/vision-and-objectives/index.html [↑](#footnote-ref-2)
3. Graham Sharp, Office for National Statistics; Lean Six Sigma techniques and their relevance to the work of NSIs [↑](#footnote-ref-3)