

The Kodak Operating System: successfully integrating Lean and Six Sigma

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Introduction

The Kodak GCG factory in Leeds, England is a model of Lean in action. Bright yellow lines clearly delineate workspaces; tools are neatly arranged next to machines, their outlines painted so it is immediately visible if one is missing; everything is clean and tidy, there is no clutter, no waste materials; even the workers themselves are neatly turned out in matching safety gear. The whole place exudes calm efficiency.

The Lean Six Sigma journey for Kodak began in the 90s when the corporate head office introduced the Kodak Operating System (KOS). Based on the principles of LSS, it was implemented at the Leeds factory in 2002, with initially mixed results, as is often the case in the early days of an improvement programme.

However, Mike Harding, the Plant Manager at Leeds, believed that it was the right thing for the site. “We knew what we wanted to do but didn’t know how to do it,” he says. “These methodologies gave us the tools to do it.”

The focus of the programme changed from having a handful of projects run by two or three Black Belts, to a more strategic approach employing a large number of Green Belts working on many projects, with training and support from consultants Rath & Strong. This proved much more successful, lifted the organisation and the programme began to take off.

The biggest challenge

Kodak GCG provide a wide portfolio of digital, conventional and business solutions to the graphic arts industry. At the Leeds plant, they manufacture single layer, thermal digital plates for use in lithographic printing. It became quickly apparent, when they mapped their processes, that probably their biggest challenge was cycle time. Twenty-three days was the shortest lead-time, with one hundred days not uncommon.

“We did our Value Stream Mapping and from receipt of raw materials to the time the product went out the door and established that four days was our value added time. Everything other than four days was scrap and we saw then that waste wasn’t just product waste.

“Under the banner of the 'Four Day Factory', we implemented a project where we reduced the cycle time down to ten-to-twelve days for circa 60% of our volume. This

allowed us to not only reduce inventory in-house but also in our European country warehouses who were able to take out a week of finished product inventory as we reduced our lead time by one week.. We're talking about a 25% reduction in inventory on 60% of the value – and they got it without having to do anything."

Peter Blum is the Quality and Technical Manager at the Kodak plant in Leeds who was given the task of looking at process improvement and introducing the KOS at the plant. For Peter, the success of the 'Four Day Factory' project was instrumental in successfully pushing the KOS improvement programme through the organisation.

"The savings from this one project alone were approximately £2million. We were amazed with the results. It allowed the graduates to get engaged very quickly from a company point of view, as well as apply the techniques. The shop floor people were brilliant at deployment, and the two groups complemented each other perfectly. It lifted the whole organisation, and now they are driving it."

The Four Day Factory project is a great example of how well Lean Six Sigma can work together, with one driving the other. Although the programme has been re-branded as KOS, it is still very much a Lean Six Sigma deployment, but done in such a way so that they can cherry-pick the tools and methods that complement the organisation. Kaizen events have been very useful for them.



Mike Harding

"Generally, this approach has been very successful for us," says Peter "A project is identified and sometimes it's Six Sigma, sometimes it's Lean. We have a project pipeline and during the early DMAIC stages they choose the particular tools to solve that problem."

Strategic initiative

It is not just choosing the right tool that is important in the Kodak GCG programme Projects are directly linked to the site Business Plan via a rigorous project selection system. Peter elucidates further: "We developed a project pipeline, (a Green Belt project

run by our Financial Controller) with Rath & Strong, which has criteria on ranking them based on return, degree of difficulty, how long it will take, IT resources, etc. It scores the projects, lists them, and when someone finishes a project, they can easily ascertain what the next thing to tackle is. We check that there is an even distribution across the key strategic goals we have.”

This system is a part of an electronic dashboard that reports current details of all the projects on site and what stage they are at, be it in DMAIC or not yet started. They are tracked with their Hoshin board, and everything is linked back to the strategic business plan and the elements that are a part of it. The system keeps the focus and direction concentrated on what is happening, in real-time, and identifies the key things required in order to get value for the business.

Setting up the right reporting system was very important, and the Leeds plant are in the process of upgrading to a SAP-based system. And although it is the financials that really catch the eye, it is the other, less tangible benefits that drive the effort. At Kodak, these benefits are not ignored in the reporting cycle.



Peter Blum

“We have a strategic policy deployment plan that comes down from corporate head office with key deliverables our progress which we track on a monthly basis,” explains Mike. “But we also have a corporate Lean assessment tool that rates how well we are implementing the different tools rather than putting a value on them. We have a spider diagram with the different competencies forming the outside of the web and we measure how well we are achieving them.”

Other aspects of the business apart from efficiency, such as health and safety -- they held a two year no accidents record -- have also improved, which Peter believes can be linked in part into the improvement programme. “When you deploy Lean and look closely at how people work, those things come along with it. There are other benefits as well that you can’t always quantify, but you can’t deny the end result.”

As with most programmes, engaging the senior management so they not only approve the programme, but are also directly involved in the change effort was an important aspect of the success. Six Sigma certainly requires strong management support. A committed and wholehearted Lean programme necessitates extensive organisational and behavioural change.

Whilst this is easy when everything is going well, when something goes wrong – which will invariably happen at some stage – it is easy to go back to the old, ‘safe’ ways. “That’s the change in mindset that needs to come about,” says Peter. “It’s not a one-off message, you need to keep repeating it.”

This requires strong management commitment. At the Kodak plant, they went from weekly management reports, to senior management standing on the shop floor for fifteen minutes every day at a flow dashboard, looking from customer supply all the way along the line to see what was happening that day and what the issues were. That is real-time management, where action can be taken as the problems arise.

Rath & Strong’s Vice President, Ishayau Perelman, has worked closely with Peter on the programme, and is impressed with the results Kodak has achieved. “This company went through a huge transformation from being a reactive company, to being a proactive company,” he says. “They know today what is going to happen next month; they can act today to prevent problems happening instead of dealing with them once they have. That is a huge transformation.”

People

It was the enormous desire to support the change programme from the people who were part of it that proved invaluable to attaining that transformation. The genuine enthusiasm the people at the Leeds plant had for their Green Belt projects helped immensely in both supporting the Black Belt projects and ultimately changing the mentality of the organisation. They currently have thirty four Green Belts and six Black Belts in a factory of three hundred people, and they extend across functions: the finance manager is a Green Belt.

The people on the shop floor were also very keen to lend their wealth of experience to create the Lean foundation required to build a strong and durable programme. At the initial stages of such a sweeping change programme, there will always be scepticism, especially with people with lots of experience of the work who may have seen several superficially similar initiatives come and go.



Kodak GCG plant in Leeds

Peter is also quick to acknowledge the integral part played by Rath & Strong. “The mentoring aspect was invaluable. Ishayau has been through it and experienced it, and when something would happen that would appear to be a crisis, he would be there and say: ‘It’s ok, it happens all the time, this is what you do...’ and it worked. Having that support – in addition to the training – has made a tremendous difference. I’ve worked with many consultants but there are few who do what Rath & Strong do.”

Mike Harding agrees. “They provided us with a rigorous training programme and then reinforced the process by coaching and mentoring. We would not have had the same success we have had without them.”

Impressive returns

All of this collaborative effort – between support staff, the shop floor, management, consultants – has resulted in impressive returns across the board. Back in 2004, the Leeds plant was one of the most expensive sites in terms of how much it cost to run the site compared with other sites in Europe. Few believed it could be a cost-competitive site.

Four years later, they are beating competitor sites in Central Europe that have had more investment, and are close to Eastern Europe sites that have significantly reduced labour costs. “We have demonstrated that UK sites can be cost-effective,” says Peter. “After all, labour costs are around 20% of the total, so by increasing efficiencies in the other 80%, you can compete.”

This has led to them being used for internal benchmarking, as Mike explains. “Our German site is much more capital intensive than us, but our productivity is as good as theirs. We’ve had two groups of technicians & supervisors come over and see how we’ve implemented Lean so they can leverage the benefits across the sites.”

Back in the factory, they continue to run at full capacity, and Mike believes there is still much to do. “There are three areas of concentrated effort now. One is variability and improving quality even further. Another is productivity, and we’re looking at taking the advantage from the projects we’ve already implemented. And the other is finishing off the level flow. We’ve done it for 60% of the volume and we’ve got an opportunity to do even, more especially after SAP.”

Key improvements at Kodak GCG Leeds plant

KPI	Measure	% Improvement
Safety	Lost Time Accidents	Record 2 years without an accident
Quality	Complaints	50%
Service	OTIF	89%
Volume	Square Metres	63%
Yield	% of good	7%
Utilisation	% available time	24%
Productivity	Square metres per man	85%
Inventory	Average annual inventory	33%
Headcount	Full time equivalents	15%

Matthew Moore is the Content Editor of onesixsigma.com. We are always interested in writing and/or publishing case studies about improvement programmes/deployments. If you would like your organisation and programme to be featured, please get in touch with Matthew.