

# Implementing Business Improvement Techniques – A Case Study

*Chris Mckellen helped project manage and facilitate major changes at a traditional bakeware manufacturer*

## **Background**

GW International is based in Burnley, Lancashire. Formerly known as George Wilkinson (Burnley) Limited, and established in 1931, the company is part of the Metalrax Group PLC and expanded organically, but then more rapidly approximately six years ago when it merged with its main competitor. After the merger, the company effectively maintained two traditional product ranges and also maintained the culture of two different organisations under one roof.

The company has always been profitable, is the leader in design and innovation for bakeware, has attained ISO 9002 and supplies both large supermarkets and small independent retailers with UK manufactured bakeware products which are complemented by a range of kitchen tools and gadgets imported from overseas. Some of the traditional markets are under threat from both imports from Asia and lower cost materials such as silicon spray coatings. Also an anomaly has arisen where previously, high quality bakeware was made from thin steel sheet with a highly durable non-stick coating, but some consumers prefer thicker bakeware which is often imported from China.

## **Traditional Manufacturing Philosophy**

The business contained seven distinct production and storage areas (diagram 1), plus the administration areas:

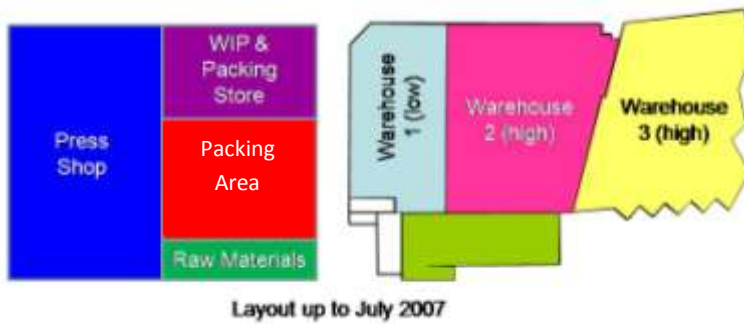
- Receiving of raw materials - steel coil and sheet
- The Press Shop
- Work In Progress and Packaging Materials Warehouse
- The Packing area

In a different building across the road:-

- Warehouse 1 – for customers – low level racking
- Warehouse 2 – for customers – high rise racking
- Warehouse 3 – for customers and bought in components – high rise racking

In the production areas, large batches were processed because they eliminated set-ups, over-production was common because 'we always finished the coil or pallet', irrespective of what the customer wanted, work in progress was 'good news' because it took pressure off us, and the priorities were set by the daily shortage list and 'what we needed to ship today'.

In late 2004, Garry Gresham, the chief executive, decided that the company 'needed to do something' to reduce its cost base to retain its market position, reduce its stock holding and improve on time availability. He had read some articles on 'lean', and invited outside experts to undertake some diagnostics on the manufacturing aspects. As a result, three senior managers then



attended a 3 month training programme to understand the concepts and benefits of implementing business improvement techniques.

attended a 3 month training programme to understand the concepts and benefits of implementing business improvement techniques.

### Initial Training

Following their introduction to lean, the three senior managers set about relating it to their business and the value streams were mapped for some critical processes. The flows of components throughout the business were identified as were the bottlenecks. To make successful changes and implement them, the team realised that the word needed to be spread amongst the complete workforce.

At almost the same time, a local training agency was offering the NVQ in Business Improvement Techniques, Level 2. This qualification would be preceded by some training in the various topics by a lean facilitator who had much experience of implementing change. Four groups of six employees volunteered to attend. Theoretical training was kept to a minimum and wherever possible, real example used and with practical training taking place on the shop floor. The teams were trained in various techniques and some amazing improvements were achieved. Typical examples are:

A press change-over took on average between 90 and 120 minutes. The set up reduction team identified improvements that could reduce this changeover to less than 30 minutes. These could be applied to another nine identical presses which were changed over two or three times per week.

To move materials from the packing area to the main warehouse involved moving on average 85 pallets per day and each pallet took on average 230 minutes. These movements of people and pallets involved travelling almost 55 km per day! The NVQ group from the warehouse reduced these figures significantly.

The 5Ss – cleanliness and orderliness – were applied to key areas of the business and areas with dramatic changes were used as examples for the rest of the business.

It was soon apparent that the small core of people were making changes that the whole company did not understand and it was agreed that every employee, including the telephonist, the office cleaners and the sales staff would attend a two hour 'Introduction to Lean'. As normal, this series of session met with some opposition from the shop floor – 'it's to make us work harder'. There were even more surprising comments from administration and support areas!

Although these improvements were isolated islands, they were noticed throughout the business and this spurred enthusiasm from both management and employees for another group to take the NVQ. At the same time employees were asked to apply to become 'lean leaders' – a group of people who would be trained in the business improvement techniques and who would spearhead change throughout the business.

In 2006 a third group of employees were trained for the NVQ and some key employees who had achieved the NVQ Level 2 then studied for the NVQ in Business Improvements, Level 3.

### **Sustaining is Very Difficult**

Unfortunately, the whole company did not have the total commitment to sustain the initial improvements made – the set up reduction technique was not applied to all the presses – just one or two. The 5S auditing was later carried out by one person and ultimately became ineffective.

As Garry Gresham realised, "People, including some managers, were generally comfortable with the 'old way' and saw no need to improve". And, the lean leaders allocated 'project time' slowly became swallowed up in the normal working day and other change projects.

### **Implementing Syspro**

The implementation of business improvement techniques was also overtaken by two significant other projects – an inventory reduction programme and a new company-wide computer system. The old computer system supplied raw data, rather than information, and this was then manipulated using spreadsheets or other sub-systems by almost everybody in the business! The system provided financial information but little else. Stock and warehouse management were updated at different time frames and there was no production planning or monitoring of components to finished products.

After an in depth analysis a new Syspro ERP system was selected and went live in January 2006. The supplier, K3, had a good understanding of the changes that GW International were trying to make and the system and lean were complimentary.

The system was introduced efficiently and effectively, on time, within budget and with the minimum of 'alterations and customisation'. After several months, users got to grips with the benefits of the new software and agreed that it really did make their lives easier! The benefits of the attempts to become lean and the new computer system started to show – administration has been reduced by 50%, stocks reduced by 33%, 100% improvement in stock accuracy shortened lead times and instant, real time information.

## The Need for Change

In late 2006, there were significant changes in customer demand and one major customer resourced his parts to a competitor. Change was essential- but what?

A series of discussions took place and various strategies considered. “We discussed them with Chris Mckellen, as he had worked with us for a couple of years and his views were almost the same as ours”, said Garry Gresham. “We needed drastic action to:

Consolidate the whole business

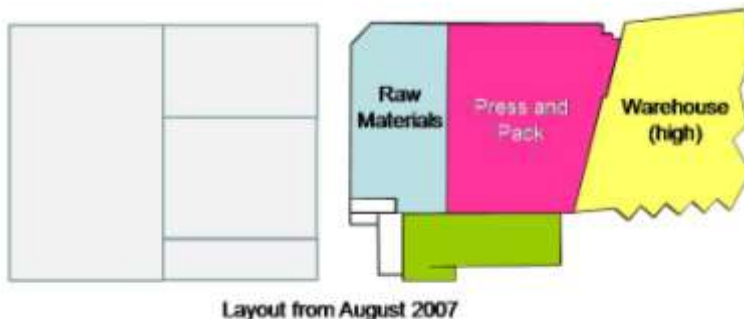
implement and sustain business improvements (lean)

adopt new materials planning and production systems

Implement a new manufacturing philosophy

Get control of our suppliers, and protect the business for the future”.

In November 2006, the far-reaching reorganisation plan was drawn up. The whole business would be consolidated on to one site. The existing receiving, press shop, WIP warehouse and Packing areas would be moved to two of the three existing warehouses. The low level Warehouse 1 would be demolished and replaced with a new modern building; Warehouse 2 would become the main manufacturing area, contain manufacturing cells utilising flow and Warehouse 3 would remain as the main warehouse from where customer demands would be kitted.



Lean was to become the driving force for changes in the manufacturing areas, Syspro would become even more important to the business and it would be supplemented with Preactor for simplified production planning.

The new manufacturing philosophy applied just basic common sense: manufacturing schedules were to be fixed for two days so that each manufacturing cell would have a realistic chance of achieving schedule adherence; each cell would contain presses and packing benches so that parts would be pressed and packed almost simultaneously; parts started today would invariably be finished today and passed in to the stores tomorrow and the business would no longer run by the shortage list, but using safety/buffer stocks! Suppliers were encouraged to deliver what was needed when it was needed, not what they thought was needed or, when they wanted to deliver it.

The product range would be reviewed and rationalised, some high running parts would be subcontracted to overseas suppliers and very low volume components would be dropped. Some 30 low usage presses would become surplus to requirements.

Unfortunately, some job losses would be inevitable due to the changes in the way of working, and the structure of the new business, so employees were encouraged to apply for the jobs in the new

operation. At this point it was also important that the company introduced much better and more direct communications to keep all employees informed of the changes ahead.

### **The Devil is in the Detail**

As part of the proposed changes, a new layout was prepared - on PowerPoint to illustrate the business flows and on desks for the factory layout. Every machine was cut out of card and placed on the layout tables. Employees were invited to look at the new layout and to move 'their' machine if they were not happy with the layout. Whilst it is often simpler to use computer systems to develop the shop layout, the old fashioned method easily allows all employees to be involved.

A trial cell was established, by moving some presses and benches to form one of the proposed cells. Employees were encouraged to experience the new concept and training in pressing and packing took place for the packers and press operators. We wanted the concept of 'operators' rather than press operators and packers.

Having finalised and agreed the new layout, a detailed project plan was prepared containing almost 1000 individual actions. A large printed version of the final plan was posted on a wall and again all employees were invited to view and understand the plan.

A project team representing every department involved in the re-organisation was established and the team members became empowered to achieve the plan. The project plan was reviewed by some every day and updated prior to the formal project review meeting every week.

A new production manager (one of the NVQ level 3 candidates) was appointed — by an interview team that included an unbiased third party. The production manager then was involved with the interviewing of his direct reports, the team leaders, who are each responsible for a group of the press and pack cells. The production manager and team leaders then underwent some intensive training on the theory and practice to support the new manufacturing philosophy.

### **The Move**

The move was planned for the traditional 'quiet period' in mid year, prior to the start of the main selling season. However, the anticipated lull in demand did not materialise as expected and production volumes were way above expectations during the move period. In preparation for the move it was agreed that some security stocks for key customers would be established – 'just in case'!

Despite some poor weather during the building construction phase, there were no issues during the move of production equipment, and it was completed absolutely on schedule and with only a couple of minor last minute alterations.

## **The Aftermath**

For good sound building reasons, the new building (the raw materials warehouse) was delayed but it was agreed that the move of the manufacturing area would take place as planned. This resulted in materials still being delivered to the old areas and then being transferred across the road as required. This obviously caused some slight delays in production and prevented the team leaders ensuring today that their materials for tomorrow were available. It took approximately three weeks for all employees to get used to their new location and the major changes in the way they worked, the new systems and procedures.

In October 2007, everything is back to normal – the level of business has not declined significantly as new customers have come on line. The busy season is starting and production is planning to start an evening shift to cater for the months before Christmas.

## **Conclusion**

The changes to the business were necessary to support customers for the foreseeable future and could have only been made with the support of both employees and customers:

- The significant reductions in inventory throughout the business that have been made have had no adverse effect on the customers
- The benefits of the new computer system far exceeded expectations
- Kanbans will replace large piles of work in progress
- Employee facilities have been upgraded both in the production and in some non production areas
- The business is becoming even more responsive to its customer needs – it will soon be able to make today what the customer needs tomorrow
- Sanity is being brought to production schedules – the occasional ‘rush’ job is now being planned in to the programme and schedule adherence is achieved
- The change has united the company under its new name – GW International – rather than still having pockets of people and systems from previous cultures.
- The product range has been rationalised to eliminate the ‘almost’ duplication of components

The company sees that these changes are only the start of the process of ongoing continuous improvement and that major tasks such as set-up reduction need to be re-addressed across the whole business, that total productive maintenance needs to be introduced on critical equipment in the future and kanbans need to be reduced in size as the production flows continue to improve.

Garry Gresham says: “Twelve months ago, we started with an urgent need to change. We realised that piecemeal improvements do not help the bottom line and that we would have to address the whole of the business system. It was pretty challenging to re-organise the business whilst still getting to grips with a new ERP system. We needed and relied on external support for project management and training because we were still busy running the business everyday”.

“We have changed the culture of the whole business from the top down and from the bottom up, we’ve improved our communications, our business systems and the way we manufacture parts. We are now getting ready to start the next wave of changes!”