SSA BUSINESS SOLUTIONS

Case Study

SECTOR **FLEXIBLE PACKAGING**

LEAN SIX SIGMA

Precision Print Graphics Ltd

Lean Six Sigma

YEAR
2010

SECTOR
Flexible Packaging

REGION
India, Asia

SERVICES
Flexible Packaging Printing

Precision Print Graphics Ltd (name changed) is one of the leading flexible printing cylinder manufacturing companies, catering to major needs of flexible packaging printing requirements. It manufactures steel cylinders with copper cladding engraved on it, with the patterns that we see on the packaging materials. PPGL is led by visionary leaders who wanted to instil a culture of continuous improvement in their organization and hence adapted Lean and Six Sigma.

SSA partnered with PPGL for 3 years, so that they could internalize the best practices. To start with, PPGL applied Six Sigma methodology for solving certain defects in manufacturing. Doing this increased the throughput, as the defects were reduced and hence the rework had come down. Six Sigma approach improved the point efficiency as it focused on the process variation reduction only and not the end to end material flow.

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INDUSTRY OVERVIEW

Flexible packaging types are now being widely adopted across several different product and consumer goods categories. This is because products in flexible packaging are lighter and easier to carry, more convenient to use and are more often than not cost effective options compared to other packaging types such as metal, glass and rigid plastic. With the use of packaged goods products trickling down from India's large cities into small towns and villages, the use of sachets and other small flexible packaging types has seen very rapid growth as these tend to carry low unit prices and are affordable to India's rural masses.

Flexible packaging industry globally is estimated to be nearly USD billion & is growing at steady pace of 7-7.5% annually. The developed world regions of North America, Western Europe and Japan constitute the biggest market for flexible packaging, accounting to about 70 % of the share of the world's total market. India, in fact, historically is growing at 15-18% p.a.

BUSINESS CHALLENGES

PPGL customers use multi-colour printed packaging materials that requires multiple cylinders; one per colour. PPGL faced a very peculiar problem of making a complete set of all the cylinders for a particular customer. Even if one cylinder was not produced, it could not be despatched, as the customer refused to accept it since the printing work could not commence. The reason being that these printings were done in an automatic machine that printed all the images on a continuous basis.

The CEO's concern was that the despatches did not happen in full set of cylinders although the production department claimed that they have met the target number of cylinders in a given period. Eventually, the PL account did not meet the target even when enough capital investments were made and capacity of the plant was available on paper.

Hence, the business case was to improve the manufacturing system in a way that it always ensures complete set of cylinders being produced. The acronym used by PPGL is OTIF which means On – Time – In – Full quantity. The current level of OTIF is 51% which means that 49% of the cylinders produced cannot be despatched as they are not full sets what the customer wants PPGL had enough capacity as calculated by the planning department and in fact, it had excess capacity of the capital intensive engraving machines.

Every order of PPGL is customized as the graphics have to be designed and prepared for the CNC machine to accept the programme. This made a complex information flow through their design department which had its own lead time and had to synchronize with the production plan. The blank cylinders were procured by the sales department from 4 different vendors situated at different locations in India, which also has its own lead time. In addition to new cylinders, customers often want to use the old worn out cylinders to save cost. These old cylinders were collected and stored at PPGL and had to be machined to make them ready for copper plating. This combination of old and new cylinders made the planning difficult.

The objective of the planning department was to ensure that the plants were not idling for the want of cylinders and hence their approach is to keep the machines occupied irrespective of whether they could be despatched. Ironically, all the traditional manufacturing systems were focused on efficiency and not effectiveness. The MOP (Measure of performance) for the factory is Machine Utilization Ratio (MUR) which drives the people to keep the machines occupied.

The rationale for MUR is that the capital investment must give ROI – return on investment; the notional feeling of the management is if the machine is occupied we are assured of ROI. Alas what a wrong expectation! At the end of the day, the CFO only wants to know “Where is the money?” And the money will come only when the customers get what they want; which is the effectiveness measure, but which is not the measurement for the production department. In summary, PPGL had all the resources and everybody worked hard, but no spectacular results were achieved.

SSA’s LEAN APPROACH
RMAOR® Methodology

SSA applied its RMAOR® methodology (Recognize - Map & measure - Analyze- Optimize – Repeatable) to re-engineer the entire manufacturing system of PPGL.

A multi-disciplinary team was formed representing all the business processes in the value chain, right from marketing to despatch and they were trained by SSA using their RMAOR® methodology for 5 days. The Lean Foundation course taken by the team covers all the tools and techniques needed to design a pull system that will meet the objectives set by the management. After the training, the team was facilitated by SSA Lean experts in the form of workouts.

BUSINESS BENEFITS

The project duration to achieve the above results was 6 months, including the implementation and demonstration of results. The question that might be running in your mind is whether these results are sustained. The project was completed in 2010, and with continuous improvement through kaizen projects, today PPGL has achieved double the output without any capital investment. This was made possible by mere institutionalization of Pull system which is irreversible.

The following are the results achieved after implementing the Pull system as per the FSVSM:

LEAN OBJECTIVE	METRIC	BASELINE	TARGET	ACHIEVED
Lead Time	Hours	98	48	54
Work-in-process (WIP)	Number of cylinders	225	124	130
Productivity	Cylinders per day	82	100	96
OTIF (On Time Full delivery)	Percentage of full delivery	51%	95%	93%

"Excellent clarity in communicating ideas at all levels of employees, also good methodology adopted for Project Handholding & Completion."

- Head of Operations, Precision Print Graphics Ltd

ABOUT SSA

SSA is a leading Business Excellence Solutions provider specializing in offerings like Lean, Six Sigma, BPMS, Strategy Deployment and many more. SSA provides customized business consulting and training solutions across countries and has helped its clients make a cumulative savings of over Rs. 1000 crores and growing. SSA is the first and only authorized provider of IACET CEUs in India.

For more information about SSA, visit www.ssa-solutions.com