



# LEAN PRINTING & PACKAGING



## BACKGROUND

Printing & packaging is the industry that procures, converts and delivers the materials necessary to create a product's distinct brand look and appeal. A typical company in this industry is procuring raw materials, shaping them, printing on them, and finally delivering them to the consumer goods companies. Consumer goods companies will then use them to package their products and sell them to the end customer. The overwhelmingly high variety and precision that characterises the industry has resulted in the existence of lots of small, specialised converters. These converters are being squeezed between big raw materials producing/sourcing companies on one side and big consumer goods companies on the other side, with little room to negotiate.

This means that if raw material producers increase prices, the converter is squeezed and has to absorb the increase and decrease margins, as converters do not have strong negotiating power over their clients. On top of this, the market now demands innovation and environmental consciousness with regards to packaging and, to cater for those needs, converters are obliged to invest heavily in upgrading equipment and finding specialised personnel. These dynamics are creating a fragile, low-margin operating environment that depends heavily on operational excellence in order to survive and grow.

# CHALLENGES

ANY COMPANY OPERATING WITHIN THE PRINTING & PACKAGING INDUSTRY HAS TO BE ABLE TO COPE WITH FIVE IMPORTANT CHALLENGES:

## MATERIAL LOSSES/PRODUCTION SCRAP

Statistics show that for most converters, raw materials represent 80% or more of their total cost. Usually, the scrap value cannot be recovered or charged to the customer making reducing scrap losses a top objective.

## SMALL BATCHES/HIGH VARIETY

The amount of different types of products and the need for rapid development and commercialisation has put immense pressure on converters to be flexible and produce small batches with quick change-overs. The challenge is how to make this business model economically viable with the smallest amount of losses and the highest possible machine utilisation.

## FAST INNOVATION

There is constant pressure from end consumers for new, innovative products or for improvements to existing ones, with features such as eco-friendly packaging. This need is pushed up the value chain with the printing & packaging industry playing a major role in differentiating products through innovative packaging.

## HIGH TRANSPORTATION COSTS

Typically, the output of converters is of relatively low monetary value and highly space consuming (for example paper rolls). This makes transportation costs a critical cost factor. Maximising capacity utilisation of transportation and optimising transportation lead-time have a direct impact on profit margins.

## CAPITAL ALLOCATION / WORKING CAPITAL MANAGEMENT

Investing in research and development and new equipment has been vital to the survival and growth of converters. This is driven by market needs in terms of differentiation, weight, material consumption reduction and eco-friendly materials. In an industry that is characterised by low margins and quite often low volumes/high variety, correct allocation of capital and working capital management can make the difference on who will survive and grow - and who will not.

## FOCUS AREAS

The competitive nature of the printing & packaging industry focuses management attention on operational excellence. Management's challenge is how to create agile processes that can respond on time and on cost to the ever-shifting market needs. To achieve that goal, the best players in the market are investing much of their time on; reducing waste, maximising capacity utilisation, training and motivating highly specialised employees, becoming closer to suppliers and customers so that they can produce what is needed, when it is needed and at the appropriate cost. They have chosen to embark on Lean journeys because Lean provides a solid foundation for their operational excellence programmes.

### AREAS OF WASTE OFTEN IDENTIFIED IN PRINTING & PACKAGING:

#### INVENTORY

Inventory build-up occurs because the converter has to keep up with the fast pace of changing customer requirements (especially FMCGs). This affects working capital utilisation, especially critical when products are discontinued.

#### MOVEMENT

Wasted movement slows converters down and, in turn, their ability to deliver on-time. The need for quick changeovers and for managing the complexity of this type of activity (for example, offset printing machine changeover; cleaning, size change, colour change, startup, colour matching and proofing) is critical to high capacity utilisation with small batches.

#### WAITING / DELAYS

In the world of fast moving consumer goods, being consistently on time is one of the main competitive advantages of a converter. Reducing waiting and delays can make a substantial difference to the relationship with the customer, avoiding penalties and retaining margins.

#### OVER-PRODUCTION

Producing more than the customer requested at that point in time ("push" production) is, in reality, one of the main reasons that the rest of the above wastes occur and thus has to be eliminated.

#### OVER-PROCESSING

If customer specifications are exceeded, this drives cost that the customer is not willing to pay for. In an industry where raw materials and processing are the major part of the cost, over-processing will reduce margins.

#### DEFECTS

Printing & packaging has complicated operations with high expectations in terms of specification, precision, repeatability, health and safety, aesthetics, etc. There are a lot of quality variables that must be met or else scrap is generated. In addition, trim waste is also a major driver of scrap. This affects not only margins but also the ability to deliver on time and in full.

## LEAN SOLUTIONS

The intense focus on waste reduction that comes with the implementation of Lean and the cultural change towards continuous improvement that goes with it dramatically improve the operational health of the organisation and ultimately, it's financial performance.

### IN ORDER TO ADDRESS THE MAJOR CHALLENGES OF THE PRINTING & PACKAGING INDUSTRY MENTIONED ABOVE, LEAN CAN OFFER:

- Waste reduction of trim, production set up scrap, production defects, ink waste reduction etc. by methodical quantification of losses and identification of root causes. Solutions are implemented along with follow-up processes to keep the losses at an acceptable level.
- Better utilisation, higher output and production flexibility through improving processes starting from the pre-press stage all the way through printing, die cutting and finishing/packing to delivery. This is achieved through meticulous study of the involved tasks and elimination of waste embedded in them.
- Fewer defects through the introduction of robust quality processes. Supplier and customer are integrated so that critical parameters such as printer's speed or winding and unwinding pressure are set correctly and controlled.
- Optimised lead times through the use of "just-in-time" methods to steer the delivery of inks, substrates and printing accessories and tools.
- Fewer changeovers on the press through the implementation of Lean planning.
- Faster innovation on quality of printing, new colours and shapes and use of alternative packaging materials by focusing on better understanding of customer needs and creating Lean processes that allow a more targeted/cost-effective approach to designing and commercialising new solutions.



# TANGIBLE IMPROVEMENTS

## LEAD TIME

- Reduction of changeover time on label printers by 88% from 4 hours to less than 30 minutes through the use of SMED
- 30% output increase of a packaging line through reduction of delays, material unavailability, cleaning time, time spent waiting for QA, changeover time, etc.

## QUALITY

- 25% raw material waste reduction through improvements in the machine setup processes, planning of changeovers and maintenance of the machines

## COSTS

- USD 5 million saving through controlling raw material losses at a magazine printer
- 60%-80% WIP decrease through reduction of over-production





Should you be interested to know more about our Lean services regarding this topic, then please contact us:

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