You know digital printing is really sexy and it is becoming increasingly easier to produce top quality prints. Even screen printing devotees like yours truly have to admit digital printing is delightfully enticing. Then our esteemed Editor Jon Barrett speaks of a new marriage of printed ink and electronics display. How long before holography threatens flat electronics display? When I was a child everyone had a bicycle then for nearly 20 years they went out of fashion. The bike evolved into BMX and then mountain biking, suddenly vast numbers of people are peddling on remarkably expensive machines wearing lycra emblazoned with fluorescent transfers topped off with sculptured brightly coloured headgear. Peddling was dead now biking is burgeoning decorated with screen printed graphics. Life goes in cycles (oh that's awful).

Companies just moving into screen printing have a real opportunity; they don't have the legacy of bad practice to over come. Simply starting in a clean environment that has a stable temperature is a tremendous advantage. Why is temperature so important you may ask? Temperature affects the flow characteristics of the ink, squeegee hardness and mesh tension. If you are pad (tampo) printing the effects can be even greater as solvent evaporation is the mechanism that the process employs to transfer ink.

When providing heat into the working environment you should try and stay away from hot air blowers stuck in one corner blasting out hot air. They create draughts, stir up dust and increase the levels of static electricity, everything you don't want in a printing environment. Radiant heating, electric quartz or gas U-tubes are an alternative or even central heating radiators. Talk to your gas and electricity suppliers, they can give very useful advice. A competent heating engineer will also be able to point you in the right direction. The ideal is an air-conditioned and humidity controlled clean room. If you walk onto the shop floor and it is cold and dusty you are in trouble. The problem most of us are facing is that the buildings we occupy are typical industrial units with high roofs. A suspended ceiling helps insulate from the effect of sun on the roof and reduces the volume of air that has to be stabilised. Modern production dryers radiate very little heat into the workspace in fact their extraction systems remove the cooling air along with air from the shop so if the shop is sealed you could a vacuum packed workforce (now there's a thought).

Enough frivolity and thoughts of Carol in cling film. The answer to your problems is all but a few clicks away on the internet for there you can purchase a 54 page booklet that tells you "Everything you need to know about screen printing" for £3.99 and you will be pleased to know that you can expose your stencils with halogen bulbs. "You don't have to use those expensive UV bulbs that so called experts claim you require." Working on the principle that most rocket scientists started by letting off a firework then novice screen printing practitioners may find this information of some use. Screen printing in a garden shed to large format four colour in line is a similar step. You may be saying to yourself the old geezer is rambling again, well there is an element of truth in that but it is leading to a point and that is the printing industry, not just screen printing has to join main stream production processes in managing itself. The custom of 10% overs still pervades the industry.

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Whichever printing method is being used there is still a major element of “craft” in the process. Practitioners will assume furrowed brows and proclaim that the skill is in keeping it going, dealing with a huge range of variables. How it can change from minute to minute. Because that’s how it is!

Imagine the production line at Toyota taking that attitude. They may well have done when Japanese cars were a joke being both unreliable and not what the customer wanted. So why are Japanese cars now the most reliable and the most popular cars in the world market?

Lean Manufacturing. Just two words but a totally different attitude in running a company compared to the “just get it printed” approach.

Lean Manufacturing and process improvement is a complete way of life for many companies involved in manufacturing. If they want to stay in business, make sustainable profits and be effective players in the business challenge, they have to consistently produce the highest value products and services at the lowest possible process costs, whilst constantly striving to meet the changing requirements of their customers and markets. Yes, printing is manufacturing, in fact is the classic model for producing added value. The techniques used are becoming increasingly transparent to the end customer but rather than this transparency being an obstruction to profitability it can be a driver.

What does Lean Manufacturing mean? It is about reducing waste to a minimum and making your operation as efficient as possible. This is not just waste on production but transport, stock levels, work in progress, chemicals disposal, substrate waste, overproduction, over-processing and rejects in fact anywhere where there is an opportunity to eliminate waste. Add to this the wasted communication where systems are not updated with the correct Standard Operating Procedures, quotations that have not qualified the payment terms so that the accounts department does not understand the basis of the deal. Cost can be ballooned or profits incinerated in the estimating department where feed back from production is not received resulting in unrealistic job costing, effectively quoting blind.

Adoption of Lean Manufacturing also known as Flow Processing needs the co-operation of all parts of the organisation. It can only be achieved with agreed Process Improvement and has to include the oft-neglected Respect for People. It sounds a bit touchy feely but people are the key to its success. You will never simply impose Lean Manufacturing.

It is not just about internal methods but how your company relates to the supply chain. As it stands now many companies and supply chains stumble from one uncertainty to another, hoping to pick up some profitability from the debris of doing business.

Lean Manufacturing will typically produce 25% gains in productivity, 90% reductions in Work in Progress, up to 50% reduction in floor space and movements by 75%. It simply works.

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It has to be sustainable and this is where people have ownership for the improvements and accept the challenge of taking it forward. Management simply has to keep its promises and be willing to accept the challenges made by other members of the organisation. As it stands now many companies and individuals hide behind the fog of uncertainty. Transparency means that issues can be dealt with, the team becomes confident and capable of taking on the challenges from the Far East and elsewhere. It is a brave company that takes up the challenge but a short sighted one that doesn't.

On a different topic but very much applicable to Lean Manufacturing we recently were involved in setting up a second hand but good condition screen printing machine for a client. Screen printing is about getting the geometry correct and we always like to check a machine out before we use it whether it is an ongoing production machine or a new piece of kit. One of the most common problems we come across and it was so in this case is that when the screen frame is mounted on the machine it is not parallel to the printing bed. In this case it was out by nearly 5 mm from left to right. As the snap we intended to use would have been 5 mm then the mesh was in contact with the bed on the left and 10 mm clear on the right. It was relatively easy to correct this but it was clear that this machine had been set like this for years. The only way it would have printed was to have an excessive but varying snap distance and over pressured squeegee that would have produced a different lay down of ink across the width of the screen. The printer must have assumed it was a machine characteristic that he had to live with. No wonder it was apparently underused and sold on it would have never of printed correctly for as long as it had holes in its vacuum bed. Take a couple of hours to check out the geometry of each of your machines. Squeegee, flood coater, screen frame all have to be parallel to the bed left to right and front to back. If they are not you will always have problems with consistency.

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