



**2006  
JANUARY**

**SCREEN PRINTING AT A CROSSROADS**

Since 1907 when Screen Printing was first recognised as an industrial printing process its development has been steady evolution from art based decorating medium, through a commercial printing process, to a precise means of depositing various mediums on a vast range of substrates.

Still known by some as Silk Screen Printing it has even now not thrown off the craft image in all its iterations. Practitioners in other print processes have considered screen printing to be a second class process that needs little skill and is uncontrollable. The reality is the opposite of this assumption. Screen printing has become a multifaceted process that has found its way into many sections of industry. The ability to lay down a controlled thickness of ink or medium making it the process of choice for large format graphics and industrial applications.

The flexibility of the process has been a limiting factor in its development. Exponents have been able to “make it work” and “keep it going.” This approach has reinforced the craft image. In the last quarter of the 20<sup>th</sup> Century screen printing companies have made very healthy profits often standing near or at the top of profitability league tables in the printing industry. Screen printing companies who achieved this position had applied good business practice and maximised their profitability. Others who used more unregulated methods still created considerable profits or managed to continue trading where other enterprises in less profitable sectors would have closed.

There was almost a conspiracy of ignorance where suppliers to the industry used the shortcomings of printers to leaver their products into a company on the basis of the current suppliers apparent failings. The reality was that the printers did not know how to control the process and used the perceived shortcomings of the consumables and equipment to mask their own inadequacies. Suppliers were aware of this and provided high levels of technical support to handhold the printers. The aim was to lock printers into one supplier for every consumable and sundry. Volume discounts were provided and suppliers who were experts in one aspect had to provide services and products that were not their core business resulting in less than ideal products being supplied to the printer. Expert printers did not take the single source route, preferring to use their judgement and expertise to decide what was the best mix of supplies to suit their needs. Doing this gave them the edge; as they were not being forced into the standardised product mix using methods that were more to the benefit of the supplier than the printer.

The supplier having control scenario was not to be blamed on the supplier, for them it made good business sense, some items were sold at below current market rates to enable them to maximise their profits on core products. It was good business. It was not necessarily good for the screen printing process.

By the end of the 20<sup>th</sup> Century the continued reduction in training and education in the screen printing process meant that real expertise in the process was very limited, that which was available was in the hands of suppliers. All but the best screen printing companies were constantly fighting against the process and real process improvements were restricted to accidental realisations of correct procedures.



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The weakest part of screen printing is the specification and production of the stencil. It is rare that problems experienced cannot be traced back to faults in the stencil. Bad working practices and lack of understanding have meant that costs have escalated through the production of rejects and machine down time. Machine utilisations of less than 50% were/are commonplace caused by faults on the stencil. These problems escalate as short cuts are taken in set up and ink mixing to try to recover lost time. The working environments made the situation even worse, uncontrolled ambient conditions destroyed flow characteristics of ink. Substrate became contaminated in dirty atmospheres.

Then along came digital printing. The first machines had to be operated in clean rooms that were air-conditioned. Amongst the production desert of a typical screen printing company was created a well illuminated oasis of cleanliness and control in which was placed the "High Tech" machine, that needed no stencils, the ink came in closed containers and it produced a wonderful four colour image at the press of a button. It was slow but it was easy. Short runs that were previously impossible now became sought after. Models and mock-ups looked like finished products. Even "proofs" for screen printing could be produced, the colours weren't correct and there was no rosette patterning but it had some uses.

There was a culture change within screen printing companies. Suddenly process control was not only essential but imposed on the company because the computer that drove the system forced it upon the company. The huge added bonus was the selling price of these fast turn-round high quality low volume prints. It was like printing money. It was exciting it was sexy!

The arrival on the market of large format near photographic quality images stimulated the demand. Advertisers wanted more of it but it was very expensive in anything but short runs. Point of sale screen printers responded by installing large format multicolour lines, 2, 4 and 5 colour systems with huge capacities in the UK alone in 2005 there are 100 or more such systems.

Digital printing machinery suppliers saw the opportunity in an easily identified market. Screen printers were familiar with digital technology having used computer based origination systems for many years. The need to print on various substrates of different thickness spawned the flatbed digital printer. Still relatively slow, 40 metre<sup>2</sup> per hour, these machines both encouraged more sales opportunities and started to erode traditional screen printing applications. To add to the pressure on screen printing it was the large consumable suppliers who formed partnerships with digital printer manufacturers to penetrate the screen printing market, effectively Trojan Horses. One of their main drivers was the relatively high selling price of digital printing inks. Pressures of increasing commodity costs and demands for lower prices from large format printers meant that they had to have premium products to support their profitability. Acquisitions and mergers of the major ink companies further exacerbated the situation. Fuji with Sericol and Sun Chemical with Coates being typical examples.



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Screen printers perceived digital printing as a way out of the traditional chaos of stencil production, profiling origination, printer variables, Health and Safety issues and Environmental Legislation. Push the button and it prints.

Responses from the industry have highlighted key issues regarding the growth or otherwise in Graphics and Industrial markets. Companies in the Graphics, Point of Sale market who are using digital printing as a key production process have stated that they do not wish to invest in additional screen printing capacity. Investment will be made in digital printing technology. However their screen printing equipment is working at full capacity. It may be that they will be forced to invest in screen printing should this demand increase. Some capacity can be gained by changing shift patterns but if this is not sustainable then investment will have to be made or work would have to be sub contracted out.

In the industrial sector attitudes were more positive to increasing screen printing capacity as digital printing technology is very application specific which would reduce their flexibility should there product range change.

This adds up to a great deal of uncertainty screen printing equipment manufacturers are seeing continued market opportunities particularly in the industrial sector. Companies such as Thieme are developing joint digital and screen technologies in fact hedging their bets. By 2010 it will be quite clear where the market is heading. In the interim period investment in screen printing technology will not suffer the built in obsolescence of digital printing equipment. Screen printing machines that are ten years old still can generate substantial income that is not the case with ten-year-old digital presses.