



2010 Article 7

Tee-nology

There are billions of them throughout the world; they can demonstrate love, anger, solidarity, division, fear, sadness, happiness, abuse, arrogance; in fact just about any opinion or emotion that can be printed on a mixture of cotton and polyester. Yes you have guessed a T shirt. There is no better example of the power of print than the not so humble T shirt. Take a simple white T shirt apply a simple single colour logo and its value leaps twenty fold. Make decoration a little more iconic and identifiable with a fashionable brand and the multiplier is one hundred and upwards. Whose imagination drives the inflation? The designer. Who makes it possible? The printer.

As with any item of clothing the range of cost is enormous but there is no doubt that print technology, particularly screen printing, is increasing in importance as a means of determining perceived quality and status. The toddler with his “Buzz Lightyear” baby grow to the socialite with their Karl Lagerfeld T shirt. Both purchasers pay a premium to be associated with the disparate images. The printer has to meet the exacting standards of the companies that own the brands. With some brand owners the cost of using their licensed images can be staggering. License cost per printed image can range from pence to pounds. A cost not recognised by the general public is the initial investment in the design specifications that are minutely detailed and can cost hundreds of thousands of pounds. It is this insistence on maintaining the correct imagery that can be so challenging. Licensors have specifications that detail L.a.b. values for colour, line thicknesses, gloss levels and even the number of button holes on a tunic etc. These details are backed up by proofed images on flat white paper and digital images. When translated onto textiles they have to have identical characteristics; this can really challenge the printer particularly when the feel (handle) of the garment is taken into account.

It is easy for some high end industrial printers to get a little snooty about printing onto T shirts and garments but you only have to look at the complexity of the designs applied to fabrics to realise there is a great deal of skill, technology and expertise required to achieve some startling results. One of the main exponents of this market sector is NJ Screenprints Limited of Barwell in Leicestershire. Andy Wilbore its Managing Director has led a resurgence of garment decoration in the UK. A visit to his facility will demonstrate the level of investment in high end screen printing equipment starting with stencil production and reclamation that is virtually fully automatic through to a 28 yes twenty eight colour screen printing machine. Andy and his team process many thousands of garments a day for the high street, many of whose designs are created by his in house design team. “How can Andy compete with the Far East?” you may ask. Very fast turn round, very high quality and competitive prices. The market is changing so fast as the fashion conscious public seeks variety in what they wear particularly on the club scene. Here a design trend can be measured in days not weeks or months. “This is particularly where we win against importer” observed Andy. The high street has to react to what a “celebrity” wears on a red carpet or on television. Designs arrive on Monday morning and product has to be in the shops by Friday night.

The design team works very closely with the pre-press team who interpret the original for the screen printing process and the ink system that is being used, plastisol ink is



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different to water based ink and discharge ink offers another challenge in image creation. For those who are not familiar with printing onto textiles there is a whole range of ink systems available to the printer. Plastisols are inks that contain PVC's and more so now acrylics that produce that familiar build and slightly rubbery feel whereas water based can provide a soft feel to the printed image. Discharge inks are generally used for printing onto dark dyed fabrics. These inks contain a bleaching agent that reacts with the dye in the cloth and effectively creates a white background for the colour. Inks can contain pigments or dyes which mean they will sit on the fabric or change the colour of the fabric fibres. Reactive dyes, acid dyes and sublimation are some of the chemistries that are used in fabric printing. Sometimes a white raft is printed down first and then overprinted with multi-colours or four colour process. When you realise that the fabric that has to be printed may be reasonably stable or stretch material it gives you some idea of the challenge that is faced by garment decorators. Don't forget the rigours of the washing machine with its agitation, spin, detergents and that most aggressive fluid water. As well as ink metallic foils are applied and a whole range of adornment glued or sewn onto the fabric. The increasing expertise of the printer is allowing the designers to extend their imaginative horizons.

Another aspect of printing on garments that is becoming increasingly important is the not just quality, price and design but how a company operates. Major purchasers, particularly the retail chains have audit procedures that they impose on their suppliers. They want to know that their suppliers operate in a socially and environmentally responsible manner. Materials included in the ink that were previously acceptable are now either restricted or banned. Chemicals that do not conform to REACH (Registration, Evaluation, Authorisation and restriction of Chemicals) regulations are prohibited. This auditing procedure may seem onerous and restrictive but it does protect our industry from goods that are produced in substandard conditions using materials that would be banned in the UK and Europe. A visit to <http://www.hse.gov.uk/reach> will provide a great deal of information about the REACH legislation and organisations such as prism The Association of Print Specialists and Manufacturers has more print specific data available to its membership.

To meet the demand for environmentally responsible inks ink manufacturers are removing unacceptable chemistries from their inks and using water based technologies. At the front of this change is Magna Colours Limited here in the UK. Since 1978 they have manufactured environmentally aware water based printing inks. Magna Colours have never used PVC or phthalates and do not contain formaldehyde, alkyphenol and ethoxylates. All responsible ink suppliers ensure that their formulations conform to the necessary regulations. In the UK we are fortunate to have some of the biggest and best. companies such as Fujifilm Sericol, Sun Chemical in the UK. All other suppliers in the UK take their regulatory responsibility very seriously indeed. They are always willing to give clarification on any aspect of their products. This is not necessarily the case for suppliers outside the regulatory constraints of the UK, Europe and the USA. There can be a temptation for the foolhardy printer to print with inks outside the regulation because of cost and sometimes ease of use but the printer runs the risk of have all the garments rejected and returned. It has happened with extremely damaging results.



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Let us not forget the entry of digital printing into garment decoration, excellent for short run work and near photographic quality images. The process can also be used for proofing of suitable work. How this penetration into the market will progress is up for debate but it will be no means as fast as the use of digital printing technology in the graphics arena. Screen and digital print are successfully combined and will continue to be so for some time. It is up to screenprinters to move the goal posts by adopting improved techniques and effects whilst making use of digitals obvious strengths. Garment decorators are a very resourceful and innovative bunch who can lead the way.

The screen printing industry should propose a vote of thanks every day to the not so humble T-shirt because it has been this item that provided a boost in the sixties and seventies that has continued to this day. Garment decoration has kept the process afloat in difficult times and will continue to do so. It is ironic that a sector that can be looked down on by "high tech" printers is in fact the bedrock of the industry.