INNOVATION IN PACKAGING

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Over 100 delegates attended the second Bob Pritty Seminar on Innovation in Packaging. Organised by the East and West Midland branches at the Bass Museum in Burton upon Trent and sponsored by Darley Labels, Gencia, Plastek, xxxxxx *(Rebecca - please can you ask Pam for the name of the supplier who came at the last minute)* and RPC Wiko, the delegates were shown how innovation is vital to a company's success.

Today's fast changing packaging industry is expected to deliver a quality product in a judicious and cost effective manner. **Chris Griffin, Chairman of Pi3** began by explaining that packaging innovation is no longer the poor relation within the design industry and most packaging industries have accepted the need to offer innovative thinking, albeit within their own material. Clients have recognised the commercial potential of packaging innovation to increase sales, reduce costs and raise awareness. Colleges in Swindon, Sheffield and Farnham now teach structural packaging and with a 165 entries in a recent competition last year there is no doubt that progress is being made.

But what of tomorrow?. Chris believes our responsibilities lie in three areas:

- Our social responsibility
- Our responsibility to record our own progress
- Our job being done to the best of our abilities, thus retaining responsibility for our own discipline.

Chris noted that friends and acquaintances may blame you for the pollution of packaging, of problems opening and then disposing of packs. Your company will argue the environmental economics of a disposable pack against a returnable system or your job requires you to put your company's products into an expensive display. Market forces currently suggest we should be totally focussed on what the consumer wants and on delivering almost infinite choice for every consumer. However, will the consumer pay for this? Of the future, Chris says that consumers may possibly require less choice but a more likely scenario is that we will have to deliver sustainable solutions and systems. We will have to co-ordinate our industry to respond to the threat of restrictive legislation and develop effective solutions for the future.

Recording progress has always been the aim of any civilisation and in packaging Chris believes that Robert Opie has been its unpaid historian for over 40 years. Sadly the Gloucester museum has now closed and Pi3 and its sister company PI Global have committed to re-establish the museum. Chris though is saddened that, as yet, no major player in the packaging market has committed to this cause.

Chris believes that the need for innovation is now an integral part of corporate culture, however, the lack of joined up management stops it happening. The dichotomy is that successful innovation requires a full understanding of all disciplines that affect a pack (production, finance, marketing, distribution etc.) Most companies have all those disciplines but few get them to work together to deliver packaging innovation. Marketing will champion a solution that will cost too dear, cause distribution problems or a progressive production director who can run a very efficient filling line may not be able to evaluate new concepts. To resolve this Chris believes companies sometimes need a fresh approach and companies such as Pi3 can offer this through an audit of the company, its market and customers. To some companies, it may require change management to ensure packaging innovation is a success.

Terry Robins, the Packaging Innovations Manager at Sainsbury's discussed the Retail Drivers for Innovation. Sainsburys have a proud record of product innovation and believe it is always been a core strength. They have segregated their customers into classes such as Time Poor, Cash Rich; Health Conscious; New Family and Lads and Lassies amongst others. Customers have told them that they wanted 'less hassle' food - more than the speed of

preparation. Our shopping trends are also dictating the packaging requirements, such as more convenience and take away foods, more foods from abroad and less people per household. This means they are liaising closely with suppliers in the Far East for baby sweetcorn and peas, ensuring the packaging protects the product over the 10,000 miles from farm to store.

Sainsburys have also decreed that they will only use enough packaging to meet the quality the customer requires. They will also reduce packaging by 5%, relative to turnover, by 2005, without increasing packaging related wastage. They are looking at trays made from potato and wheat starch, biodegradeable fruit netting and starch based refuse bags along with 50% PCW paper labels. In the meat area they are working with suppliers to replace EPS trays with mono layer APET which improves product visibility, improves recyclability and reduces cost. However, not all renewable resources can be used. PLA is a good material but is hampered by having a GM stigma.

Terry also believes that current recycling legislation could be improved if exemptions could be given for materials that had already been recycled, and packaging from sustainable crops should be encouraged by the removal or reduction of packaging waste tax. They have started by removing labels from egg boxes and directly printing onto the box, producing a saving of £200,000 / year. Cereal box size has been reduced, saving 7.2 tonnes of material and changes to the transit and display packaging of fruit juices have saved 1.6 tonnes of plastic with a £30,000 cost saving. For the future, he sees that carrier bags made with a high tapioca starch content and improvements in the supply chain will drive suppliers to innovate and improve their packaging.

Finally, he sees another Japanese technique being incorporated into western thinking. Kansei or Affective Engineering goes beyond functional and ergonomic design by adding customer's feelings, emotions and aspirations into a product. By addressing such needs you develop products that your customers want. Quite simply happy customers create more customer loyalty, which in turn creates more profit.

Packaging Automation – How far can we go? was Andrew Manly's theme. Andrew, General Secretary of the Processing & Packaging Machinery Association, identified the key drivers for automation, such as flexibility, efficiency, speed, ease of operation and, of course, price. Industry has seen more automation of manual jobs with smart manufacturing ie metal cutting, the use of different materials and more sophisticated controls and management systems (PLC and RFID). However, he believes the biggest innovation of recent years having a major impact in packaging automation has been the servomotor.

So how is this achieved?, as such innovations do not come cheap. R&D can be expensive and you need to be in for the medium or long term. However, large amounts of funding are available for pure and collaborative research eg FP6 (Framework Programme), Faraday, Link, ICT, Foresight and of course the PPMA with Bath University. Andrew believes this is too confusing and looks to the DTI to resolve this.

Evolution and revolution are needed to make machinery bigger yet smaller!, faster and more reliable and flexible. PLC software is improving all the time and changeover times will be reduced. You must though listen to what your customers want - or think they want. Build in bits before they are required, de-skill the line but do not forget health and safety as this can have a major impact on machine design.

There are barriers to automation such as the need for product complexity, conveying - as a line can only go as fast as its slowest conveyer - and correctly linking up the various machines on a line can make a huge difference. QC validation and inspection are vital and ensure you have a planned maintenance regime. Lastly, do not forget the human factor - train, be proactive not reactive and communicate clearly and succinctly. A clean, tidy and well maintained line pays dividends so celebrate your achievements.

Andrew believes the future lies with collaborative research and continuous improvement with technology transfers. How far can we go? - well the sky is the limit but have you got your cheque book with you?

Jeremy Plimmer, Secretary General, Product & Image Security Foundation Ltd asked why do we need smart packaging? Because it provides product security, product status and real time product situation reporting.

Today there is a growing threat from product piracy with product diversion and grey markets. This and the tampering, grazing and theft of products can be huge loss. Globally the losses as a 'cost' are over 900 billion dollars. These include video tapes, software, music cd/dvd's along with toys, aircraft spare parts, medicines, watches and perfumes.

Unfortunately, our global economy does not help to reduce this problem. Often penalties do not fit the crime, new products mean new opportunities for fraud and wider access to information provides a better foundation for fraud 'education'. The cost to businesses is frightening - Tomy were extorted for DM 40 million in 1998, Findus had glass inserted into its pancake products and Arnotts in Australia had to dump ton's of poisoned biscuits.

To develop solutions you need to define the problem to see what is needed and why, carry out risk management and remember litigation is an important threat - brand owners need to show due diligence.

There is a range of print related solutions such as watermarks, holograms, thermochromic inks, covert tags and threads to stop counterfeit attacks. Solutions to duplication include anti-scan artwork and inks, OVD's and embedded 'digital' markings. Tampering can be defended with T/E films and adhesives, frangible labels and tear tapes. Parallel trading or the grey market solutions include covert marking, track and trace features and forensic markers.

Radio frequency tagging can also provide a solution to many of the threats, especially if 'chip sharing' is a defined option. Chip sharing helps reduce costs by combining extra features and functions usually by other costly means. Intelligent tags can offer some key benefits such as traceability, authentication and theft protection along with time & temperature recording and tamper & tilt evidence. 'Product handshaking' can prevent a counterfeit product working in a vending machine.

Jeremy believes the key drivers that will ensure development in RF tags are in increases in market growth as more tags are used. Technologies such as printed antennae and low cost 'printed' power supplies will increase the read range. To drive the market further partnerships, chip sharing and the introduction of standards are required. Vitally we need to use smart technology to add value and generate revenue.

So, where will these smart 'intelligent' features lead us? Jeremy sees 'total' product integrity,asset visibility,to a 'demand chain' environment and a 'smart shelves', leading to a market of super brands driven by competitive advantage.

Perhaps one can say the future's bright, the future's smart!

Finally, **Andrew Streeter, Director of CPS International gave a visual insight into International Trends in Innovation.** He was keen to point out that consumer packaging is often the only commercial tool open to Packaged Brand manufacturers. It is such a complex medium in its range and diversity of technologies, materials, designs, and formats, that often there is not the expertise out there to fully comprehend it. Understanding what is happening globally is vital and Andrew's whistle stop tour of the many and varied pack types around the world was breathtaking.

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