

Celebrating Excellence in Innovation, Design and Manufacturing



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IF YOUR BUSINESS IS COMMITTED TO BECOMING MORE INNOVATIVE IN ITS WORKING PRACTICES, A FIRST STEP MIGHT WELL BE TO LOOK AT HOW THE WINNERS OF THE 2007 INNOVATION & DESIGN EXCELLENCE AWARDS ACHIEVED THEIR SUCCESS

INNOVATION & DESIGN EXCELLENCE AWARDS

Riding up the learning curve

Innovation has moved to the top of the agenda in many companies and is becoming the prerequisite for success across industry. While many people appreciate the importance of innovation, most lack the experience and understanding of how to develop and successfully launch a series of innovative new products.

The winners of the 2007 Innovation & Design Excellence Awards provide a guide to some of the important elements that make up a successful innovative organisation. They all considered innovation to be critical to their business: it was a key focus of the top management and an important element of the corporate strategy.

Each had an appropriate organisational culture that supported innovation. Managers played an important role in reinforcing and supporting this culture. They encouraged employees to try out new things, explore new avenues – but if they did not work out, there was no reprimand for failure.

They also devoted effort at the front end of the development process, especially in creating a good specification. They concentrated on ensuring that the needs of the customer were identified and, alongside this, the requirements of sales and marketing were clearly defined and agreed.

The winners had a good understanding of their customers' needs, which enabled them to be able to bring the 'voice of the customer' into the new product development process. Some of the companies had developed a deep understanding of their customers' requirements through direct observation, supported by in-depth interviews, allowing them to identify hidden needs – which customers themselves do not consciously recognise they have.

The winners were well practised at generating ideas for innovation, encouraging ideas from all quarters – including outside the organisation. In fact, they worked with a wide range of external collaborators, including universities, consultants and suppliers. The winners also used systematic, formal new product development processes to bring the novel ideas to market.

The firms had reduced the time it took to bring a new product to market, giving them a first mover advantage over the competition. They had compressed development times by producing realistic project plans, getting the specification right at the start, using the resources of external suppliers, and monitoring the plan closely and taking corrective action when necessary.

The 2007 winners exemplify some of the key elements that make up a successful, innovative company. If your organisation is intent on becoming more innovative, the first step is to look at just how these companies achieved their success.



Dr Marek Szwajczewski
Director, Innovation & Design
Excellence Awards
Cranfield School of Management



Lou Reade,
Editor, Eureka

International innovation

Innovation is alive and well in Britain – and helping UK business to win contracts abroad. A key feature from this year's judging visits has been the international focus of the entrants. Some rely on foreign markets for the bulk of their sales; others have worked hard to win foreign clients or to open up overseas markets for their products.

Just about every company on the final iDEA shortlist has used its innovative skills to compete abroad. Examples include:

- US company that could not find a home-grown design agency to fulfil its needs – and so turned to the UK. Ironically, the product that was developed may soon be expanded for use in this country;
- Huge international player that needed to research the market potential of the Far East for a new product. Again, it turned to a UK agency to deliver this – not just for the research, but product styling, too;
- Consultancy that has blazed a trail to China – setting up agreements with design agencies there and helping to set the agenda for how UK companies could win design business from Chinese companies in future;
- Software and electronics expert whose specialist products are of wide international appeal – hence the reason it has made great efforts to improve its exposure by sponsoring a US Indy Car team; and,
- Spin-out company that finds there is little market for its innovative technology in the UK – and so now focuses most of its efforts in Australia.

I've purposely left out names. However, as you read through the case studies in depth, you may be able to identify some of the companies involved.

Other than this international focus, these companies have another factor in common: they have all committed to innovation. They ensure that innovative practices drench their businesses, whether in terms of company structure, their approach to design or their willingness to try out 'risky' ventures – and that includes venturing abroad.

There's often a pragmatic reason for doing it: it's where the work is. But, in order to get the work, you have to prove you can deliver the goods – and these companies have done that.

EUREKA AND NEW ELECTRONICS MAGAZINE, AND CRANFIELD SCHOOL OF MANAGEMENT, APPRECIATE THE SUPPORT OF THE SPONSORS OF THE INNOVATION & DESIGN EXCELLENCE AWARDS 2007

SPONSOR STATEMENTS

SAGENTIA

 Cambridge
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elc

Sagentia is delighted to be associated with iDEA 2007 and to be overall sponsor for the 3rd year running for the Innovation & Design Excellence of the Year Award.

For more than 20 years, Sagentia's uncompromising commitment to innovation has led to the launch of breakthrough technologies, products and services for our clients in six global markets.

We are active in all stages of design and development through to manufacture, underpinned by a team that combines industry experience, technology expertise and business acumen.

We are proud to be associated with awards that promote success and excellence in innovation and design in the UK, and offer congratulations to all winners.

Dan Flicos, Executive Director, Sagentia
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Cambridge Consultants develops breakthrough products, creates and licenses intellectual property, and provides business consultancy in technology-critical issues for clients worldwide.

The Design Collaboration Award recognises and rewards personal ingenuity, intellectual property and problem-solving ability as critical skills and assets. We have sponsored this award because, as a leading design and development house, these are values that are close to our business. For nearly 50 years, we've enabled clients to turn business opportunities into commercial successes, whether launching first-to-market products, entering new markets or expanding existing markets through the introduction of new technologies.

With a team of more than 250 engineers, designers, scientists and consultants, in offices in Cambridge (UK) and Boston (USA), Cambridge Consultants offers solutions across a diverse range of industries.

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www.CambridgeConsultants.com

The Electronics Leadership Council (ELC) is a body set up jointly by Government and the Industry to provide strategic leadership for the rapidly changing technology sector.

The UK has a thriving electronics sector, but the threats from Asia are very real and demand a national strategy to offset the potential loss of manufacturing jobs by developing higher value UK jobs. This demands action in Education and Skills, investment in Science and Technology, a level playing field on Government procurement for UK firms and support for UK companies in overseas markets, enabling them to grow internationally.

The ELC has begun to make a difference in each of these areas, but fully accepts that there remains a great deal to be done.

Harry Tee
Chairman
Electronics Leadership Council

PDD

Digging deep

PDD, the West London-based design consultancy, has a plan for the future – to decrease its reliance on the bureau work on which it has built its reputation.

“A major strategy is to be in control of our own destiny,” says operations director Tim Court. “For the last three years, we’ve been developing our own products. It’s a fantastic cauldron of ideas here.”

He points to two new ventures for the company: Carbonate, an ‘incubator’ scheme to identify promising IP that is currently assessing half a dozen projects; and Quantex, a company it has spun off to develop a new design of pump for the medical industry.

“We’re looking to augment our traditional business with these ‘speculative’ ventures,” adds Court.

For the present, the company continues its work as a design agency, solving engineering problems for clients across a range of industries and locations.

“We work globally for several reasons,” says Court. “First, it’s essential to work with

multi-nationals. It’s also a safeguard – so we can spread the risk across several economies. And it’s interesting for the team. That’s critical.”

One recent project that brings these elements together is the development of a communications system used by ‘internet pickers’, who fetch internet-ordered products from a central store or warehouse.

“It is a voice-activated computer that can replace barcodes,” says development director Graham Lacy. “It turns data commands into voice commands – to which you can respond.”

The system comprises a rugged, belt-worn processor, which is connected to a headset via Bluetooth. The system has a 70-word vocabulary. “We think this is the world’s first rugged Bluetooth headset,” says Lacy.

The US-based customer, Vocollect, was unable to find a home-grown agency to do the job. “They couldn’t find what they wanted in the US, in terms of ruggedness, and they still can’t,” adds Lacy. “They’ve been our client since 1999.”



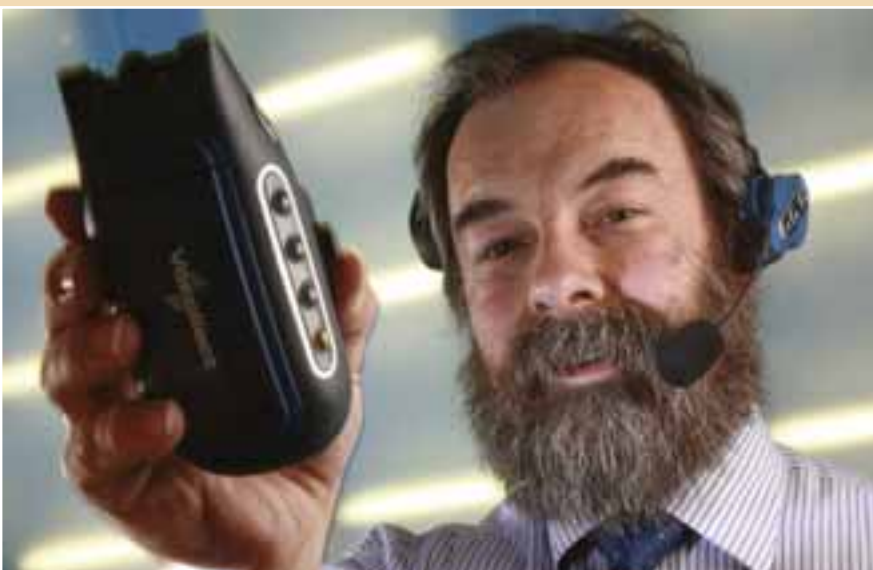
While Vocollect’s expertise is in software, PDD helped it in designing a mechanical product. Lacey believes that this latest offering – one of a line it has worked on for the customer – encapsulates a third design attribute besides form and function, which he calls ‘language’, denoting the quality of the design.

As with any work done for a client, PDD does not always have access to specific volume figures. But Vocollect is known to have more than 50,000 users worldwide – and PDD has played a big part in just about all of its products.

“Vocollect’s mission is to bring computers and people one step closer,” he says.

PDD’s core expertise is engineering design, but these days it stretches further. Also, uncommonly for a design agency, it can offer extensive in-house research assistance – in order to dig deep into the hidden needs of customers.

Some of its offerings include a video editing



WINNER
INNOVATION & DESIGN
EXCELLENCE OF THE YEAR
AWARD

WINNER
CONSUMER PRODUCT
INNOVATION AWARD

JOINT WINNER
BUSINESS-TO-BUSINESS
PRODUCT INNOVATION
AWARD

Location:
London

Employees:
60

Products/services:
Design consultancy work for clients across B2B and consumer industries, including medical, communications and automotive. Recently began an 'incubator' unit and has spun off a medical device company



suite – with special software to help keyword tracking – and an interview room, complete with one-way mirror.

“Usually, we do observational research,” says Alun Wilcox, who heads PDD’s medical operations, which accounts for about one-third of the business.

“You can’t ask people what they want in the medical area,” he points out. “So we watch what they are doing and see what they are trying to achieve – rather than just see how they are currently doing it.”

An example of where this has paid off is to be found in a medical device that PDD helped to develop. The device, used by people who perform daily injections, had a list of attributes supplied by the customer, such as reliability, ease of use, self-injecting and pain-free.

These then needed to be translated into tangible features, which included switching from manual injection to a device with electronic control.

PDD also used its research expertise in the

fast-moving consumer market. When asked by a major international player to help it crack the youth market with a new product, PDD went to work to find out the unmet needs of this new demographic.

The interview sample was relatively small – no larger than 12 people – but Lacy says that this is more than enough for this type of research project.

“It’s not about statistical significance, but is a ‘deep dive’ with a few subjects,” he says.

The original brief was to understand why the company could not get into the youth market. PDD carried out research in a number of geographic regions – including the Far East – and contributed to the styling.

While details of the case study are confidential, one of the new elements included using transparent packaging to show off the product on the shelf.

“In terms of which product we had the most effect on – when it comes to ‘before and after’ – this is the one,” says Lacy.





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PROSTHETICS MANUFACTURER BLATCHFORD KNOWS THAT INNOVATIVE PRODUCTS – SUCH AS A LEG THAT ADAPTS AUTOMATICALLY TO ITS USER'S WALKING STYLE — KEEPS IT A STEP AHEAD OF COMPETITORS

JOINT WINNER
BUSINESS-TO-BUSINESS
PRODUCT INNOVATION
AWARD

CHAS A BLATCHFORD

Learning to walk

This should seem obvious, but prosthetic feet destined for many Asian countries are designed differently – and have a gap between the first two toes.

“It’s so the user can still wear flip-flops,” explains Saeed Zahedi, group technical director of prosthetics manufacturer Chas A Blatchford. “It’s important for the wearer to blend in.”

This ability to make amputees feel comfortable is one that drives Blatchford. Crude wooden prosthetics, and limbs that are obviously false, belong to the distant past. Modern prosthetics combine cutting-edge materials, microelectronics and intelligent software to help users overcome their disabilities.

Take Blatchford’s latest product, Smart IP: a leg that can teach itself to walk. In the company’s words, the first ‘plug and play’ limb – which can adjust itself automatically, depending on conditions.

Research into this product went farther than simply understanding what the customer wanted. It involved digging deep into the science of locomotion. The development was led by design engineer David Moser, whose PhD into biomechanics formed the basis of the product. “It’s about understanding the interface between microprocessor control and patient,” he says.

The limb uses ‘off the shelf’ components – such as accelerometers and microprocessors – in conjunction with software to interpret and react to the motion of the user. Anybody with a prosthetic leg automatically expends more energy: SmartIP, and other Blatchford products, try to minimise the amount of extra exertion that is needed by the amputee.

At the same time, SmartIP adapts to its environment through a simple ‘programming’ cycle that is performed by the user. Changing a pair of shoes, for example, could have a major effect on the walking gait, but can easily be accommodated. As Moser points out:

“SmartIP empowers people to make these changes by themselves.”

Yet SmartIP is only a part of the sales drive, as the company has launched 22 new products since the beginning of 2005 and now derives significant revenue from new product lines.

Like many companies before it, Blatchford has focused on innovation to help to improve financial performance. While the company enjoys sales of around £30m, it needed to boost this – and improve profitability.

Blatchford also has a unique way of carrying out customer research. In addition to designing and developing prosthetics, it runs a network of fitting centres. This helps it to understand the needs of users and to trial new ideas among its potential users. Its trained prosthetists can try out these ideas among users and feed back information.

The company is now three years into its five-year plan and has already achieved some success.

“We have delivered the first part of our plan by meeting our targets,” says Zahedi. “Now the hard part is sustaining it.”



Location:
Basingstoke

Employees:
400

Products/Services:
Designs and develops prosthetic lower limbs, which are distributed and sold worldwide. It also has a network of prosthetists (limb fitters) in the UK.

Taking the pain out of product development

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FROM COMMERCIAL MEDICAL PRODUCTS TO SPECULATIVE IDEAS FOR HORSE RACING, CAMBRIDGE DESIGN PARTNERSHIP HAS A KNACK OF DEVELOPING AND SPINNING OUT NEW BUSINESSES

WINNER
DESIGN COLLABORATION
AWARD

CAMBRIDGE DESIGN PARTNERSHIP (CDP)

Informal arrangements

If you've recently visited Alcatraz, and stood in Al Capone's cell listening to the pre-recorded guide to the prison, you may be surprised to hear that British-designed technology makes it all possible.

Because the hand-held audio device – dubbed Xplorer – was designed by Cambridge Design Partnership (CDP) in the UK. Also used in museums and other attractions, it was developed because earlier CD-based systems were failing at the rate of 13% per year, due mainly to their delicate nature. The new device has solid-state memory, rather like an iPod, and is built to last. Failure rates are now down to 0.2%. "This was a piece of pure consultancy," says CDP director Mike Beadman of the project.

Projects like this are a key to the business and account for 60% of turnover. The company has also developed medical devices – such as a new type of lancing device – and SatMap, a hand-held mapping device for use by walkers and cyclists. The remaining 40% of business is accounted for by CDP's own 'in-house'



developments – several of which have been spun off into separate companies in its 11-year history.

Probably the most successful of these projects is Siascope, a 'camera' that can determine very accurately whether skin lesions are benign or suspicious. Fellow director Mike Cane first heard the idea on the radio. Immediately he was excited, even though at that time it was only a theory being worked on as a PhD project.

"I phoned the guy up and we agreed to support his PhD research, and try to turn it into a product," he recalls. Nine years later, and seven years after it was spun off, Astron Clinica is now larger than its original parent – with 40-plus employees, compared with CDP's 34.

Despite a heavy focus on the medical industry – which is famed for its standards and regulations – CDP is organised in a very informal way: there is a very flat structure and many staff seem not to have job titles.

"I think it empowers everybody to come up with ideas," says Cane.

The company's ability to identify, generate and spin off so many successful technologies has something to do with its pragmatic attitude.

"As engineers, you can get hooked on the technology – but it's not the most important factor," states Cane.

"To assess a project, you need to look at people, opportunities and market. Technology comes further down the list."

Another spin-off is G-Max, an electronics-filled 'sleeve' that fits around a racehorse's neck. It will help trainers take a more scientific approach to their craft by sending physical data to a handheld device via a wireless link.

And while CDP uses a range of modern techniques – rapid prototyping, 3D CAD, high-speed video cameras – it knows that its real purpose is to generate the best ideas.

According to mechanical engineer David Foster: "Of all the tools we use, whiteboards are probably the most important."



Location:
Cambridge

Employees:
34

Products/services:
Mechanical and electronic design consultancy work for clients, across a range of industries, which accounts for 60% of business – with the remaining 40% devoted to 'own brand' developments

What does the future hold for UK Manufacturing and Engineering?

Harry Tee, Chairman, The Electronics Leadership Council

The UK can no longer compete on a basic cost model with the likes of China and India. Offshoring has been occurring for some years and is likely to continue, as global markets push down prices on products that have become somewhat commoditised. UK companies must therefore succeed, not on production costs, but on Intellectual Property.

The labour market of the future is likely to be very different to that of the past. As assembly jobs are exported, so new, higher skilled jobs must be created; and these jobs will be in the development of new products and technology, and in the management of global supply chains and logistics. If industry is to succeed, it follows that the quantum of higher skilled, better-educated people must be available to support this transition. The Electronics Leadership Council has been involved with the DfES, now the Department for Children, Schools and Families (DCSF) in promoting Science, Technology, Engineering and Mathematics (STEM) in schools, and with the Learning and Skills Council, in particular SEMTA, in developing the content of the New Engineering Diploma for 14-19 year-olds and the National Skills Academy for Manufacturing launched earlier this year.

The National Skills Academy for Manufacturing is a central part of the government's skills strategy, focusing on meeting the skills needs of both large and small employers from the manufacturing sector, including aerospace, automotive, electronics and marine. In the longer term, it will also incorporate science and technology sub-sectors, such as the biological and medical sciences, and bio- and nano-technology.

The academy will train employees and managers in large and small employers, encouraging them to work closer together in the supply chain to ensure that the skills of the entire manufacturing workforce are being lifted. By 2012, the academy will be

supporting the learning and skills needs of 40,000 people per annum.

Manufacturing employers will lead the development of the academy and bring the understanding and experience of successfully competing in a global economy. The academy will help employers to maintain high levels of productivity and competitiveness by setting national standards for manufacturing skills training, contributing to regional economic development and using strong regional partnerships to involve key stakeholders in focusing on regional and local needs.

Without the right quality and quantum of better-educated, STEM-oriented young people emerging over the next decade, it is difficult to see how the UK technology sector can succeed in an increasingly global market. The ELC has welcomed the initiatives mentioned above, but believes more has to be done, in particular to attract a greater number of capable STEM-related teachers, since it is through inspirational teachers that young people will be attracted to the industry.

I would therefore like to issue a challenge. Our engineering companies, large and small, throughout the country must do more to engage with schools: invite schools into the engineering labs and the factories; give them well prepared presentations about what is done on the site, and what the end products do and where they are used.

Importantly, every company should support STEMNET's flagship Science and Engineering Ambassadors Programme, through which young engineers go in to schools to talk to students. All young people know about MP3/4 players, Game Boys, X-Boxes, mobile phones, etc, but they have no idea how they function. They take their operation for granted, but technology of this sort can excite

young people, *if* it is presented by someone with whom they can relate, and in an interesting and enthusiastic manner.

The ELC calls upon every company in the electronics sector to support the Ambassadors Programme, because, from a total population of 13,500 ambassadors in their database, only an estimated 400 are from the electronics/technology sector. We can surely do a great deal better than this!

Get your company involved by contacting me, or STEMNET, on www.stemnet.org.uk Electronics and technology are exciting, and the UK industry has excellent potential and a bright future – but only if we have the people to make it happen over the next decade.



THEMOTTEKNIX REACTED TO A FINANCIAL CRISIS BY RAMPING UP ITS APPROACH TO INNOVATION – IDENTIFYING NEW MARKETS FOR ITS RANGE OF IMAGING TECHNOLOGIES

WINNER
INNOVATIVE SMALL
COMPANY AWARD

THEMOTTEKNIX SYSTEMS

Feeling the heat

Four years ago, Thermoteknix was on the brink of extinction. The Cambridge company, which developed software and electronics for thermal imaging cameras, was faced with the sudden disappearance of its only customer.

“We had an exclusive arrangement with a single camera manufacturer,” says managing director Richard Salisbury. “When they were taken over by a rival, the tap was turned off.”

The company knew that putting so many eggs in a single basket made it vulnerable, but Salisbury says: “We had no route to market for our products. Signing an exclusive deal was the only way we could go.” For many companies, this crisis would have spelt the end. But Thermoteknix began to build on the only egg it had in another basket: a project to apply infrared imaging to the cement industry.

Centurion, which combined a linescan camera with imaging software, offered an easier way of monitoring the outside temperature of a cement kiln. In particular, it could identify and pinpoint ‘hotspots’ – and direct fans to blow cool air at them. That led to fewer shutdowns and reduced repair bills. It was a revolutionary approach to the problem.

Other cement industry products followed, each developed after a careful analysis of the market. ThermaScope, an infrared camera that fits inside the kiln, necessitated the development of a water-circulating shield to protect its delicate electronics.

Product differentiation is crucial for Thermoteknix. The 40-employee Cambridge company competes with billion dollar rivals. For this very reason, it knows it must continue to specialise.

“Our rivals are after the volume markets,” says Salisbury. “We are fast moving and can react to the needs of customers quickly.”

An example is how it adapted Miric, its rugged infrared camera, for use by the Red Bull Indy Car racing team in the US. Monitoring tyre temperatures is a crucial

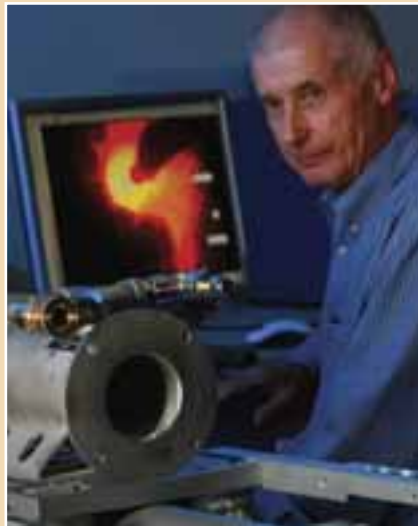
aspect of racing: Thermoteknix supplied such a system, including a wireless link to relay the data back to the pits. It also realised that the popularity of Indy Cars in the US was a good way to establish itself in such an important market and so took some of its payment in the form of marketing, such as a logo on the cars themselves.

Motorsport and other booming high technology markets – such as security, aerospace and military – helped the company to boost turnover. And the pressure is on to keep innovating, with a major US trade show acting as a kind of yardstick.

“We look to have a new product for this show every year,” says software development manager Simon Hothersall. “People in the industry expect it.”

This year’s new product is a ‘shutterless’ version of its Miricle camera, meaning that vision is never interrupted – critical in many military applications. Thermoteknix claims a world first with the technology, saying it is smaller than any rival product.

Not bad for a company that did not even make its own cameras four year ago.



Location:
Cambridge

Employees:
40

Products/Services:
Development of thermal imaging equipment for industries ranging from cement and security through to aerospace and motorsport, with a focus on differentiated products that help it to compete with far larger rivals

WINNER
DESIGN CYCLE TIME
REDUCTION AWARD

FLOORING SPECIALIST ALTRO SAW ITS PRODUCT PIPELINE DRYING UP – AND RE-INTRODUCED AN INNOVATION CULTURE TO HELP IT TO GROW IN AN INCREASINGLY COMPETITIVE FIELD

ALTRO

Flooring the opposition



Letchworth-based Altro, founded more than 50 years ago, invented safety flooring. It built a large market share – driven, it says, by an innovative approach – and is still a strong player in the market.

But somewhere along the way, something went seriously wrong. Sales growth started to slow and Altro's product pipeline began to dry up – at a time when the company was facing unprecedented competition.

"We didn't think we were innovative, though we knew that we had been," says organisational development manager Tonia Milson.

To help it meet a new set of challenging growth targets – such as doubling turnover by 2008 – the company had to recapture some of its early spirit by refocusing the business and embracing innovation. So, with external help, it set about changing its internal culture.

It re-assessed its brand values and now defines itself by six guiding principles – creative, leading edge, open and honest, confident, inspirational and delivery. At the same time, it ditched the 'silo' mentality and instigated cross-functional teamworking.

A new-found attitude to research identified an opportunity: to extend its non-slip flooring

from traditional 'back of house' applications, such as kitchens and shower rooms, into 'front of house' applications, such as shops. To do this, it would have to improve the appearance of the product.

Safety flooring is the ultimate example of function over aesthetics. It is designed to prevent people slipping in wet conditions. It does not look pretty, but Altro thought it could use its expertise to develop a product that combined functionality with aesthetics. This led to some extensive materials research to develop a new product – and a production method to make it. Altro does not develop materials of its own, but works closely with materials suppliers to source what it needs.

It has developed two key patented technologies: Maxis, which embeds particles into a base coat; and its clearcoat technology – a way of ensuring that a PVC plastisol is the correct thickness to process and spread on to the product, and will be transparent after curing.

Maxis took six years to bring to fruition. Since then, Altro has accelerated the pace at which it launches spin-off products.

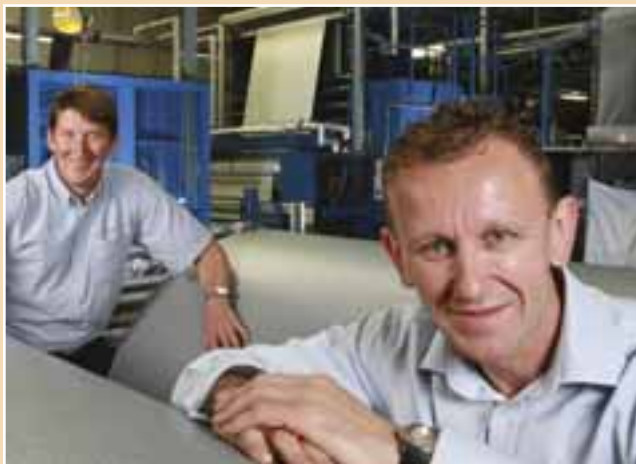
Suprema, the first of the company's 'designed' surfaces, was brought to market

in just two years, while

Timbersafe, a wood-effect floor that uses a printed film between the substrate and clear top layer, took only a year.

According to Milson: "We're still confident of reaching our target next year, through this culture of innovation and delivery."

Altro's future goals are clear: the company hopes to keep wiping the floor with its major competitors.



Location:
Letchworth

Employees:
500

Products/Services:
Since inventing safety flooring, the company has recently expanded its expertise by moving into 'designed' products, which may see safety floors promoted to 'front of shop rather than 'back of house'

DESIGN AGENCY IDC HELPED A MAJOR INTERNATIONAL PLAYER TO LAUNCH THE FIRST FAN-POWERED AIR FRESHENER ON TO THE UK MARKET – ALL PART OF ITS INSPIRATIONAL APPROACH

HIGHLY
COMMENDED
CONSUMER PRODUCT
INNOVATION AWARD

INDUSTRIAL DESIGN CONSULTANCY (IDC)

The sweet smell of success

Industrial Design Consultancy, based in Datchet, has a mission to deliver 'inspirational' products to clients: but what exactly does it mean by this?

"We think that all products should have a story," says managing director Stephen Knowles. "It's about products that inspire customer loyalty or admiration. What inspires us is new technology."

IDC was established in 1972 and, like many design agencies, has had to move with the times. Much of its traditional business – in white goods, mobile phones and household appliances – has disappeared, so it has refocused on higher-end markets, such as medical devices.

The company has also expanded beyond its original concept of pure industrial design and carries out broad design projects for a range of clients.

Projects director and company veteran Brian Gough says: "Often, clients have a great new idea – and we can help them make it into a reality."

A case in point is Airwick's Mobil' Air product. It was the first air freshener with a battery-powered fan – and, while it was seen to have good marketing potential, the company found it very hard to make it work.

"It had to be easy to refill and the batteries needed to last for 30 to 90 days," states Knowles.

IDC's redesign covered three areas: the electronics – which focused on maximising battery life length; interchangeability – making this as simple as possible; and understanding the airflow, which turned out to be the most important, and difficult, part of the project.

"The airflow balance turned out to be key to the whole project," explains Knowles. "We had to understand the evaporation of the fragrance, balance the airflow so that we didn't use too much battery power and look into different wick materials."

A paper wick was cheap – but it clogged

up with the non-volatile elements of the fragrance, so IDC opted for a sintered product instead.

"We found that, if the wick was big enough, fragrance would naturally evaporate in free air – but we had to limit this. When the fan is on, it will increase it," says Knowles.

IDC also had to take account of the 'user perception' panel – which revealed that doubling the concentration of fragrance was not always perceived that way.

According to Knowles, there was a relationship, but it was not linear. "We plugged our results into that."

On top of this, IDC's expertise of materials and plastics moulding helped it to design an appropriate housing in a distinctive floral shape. And, although the product was launched in 2004, it is still selling well.

"It's survived well past its intended life cycle," says Knowles. "In theory, a product like this needs to be refreshed every 18 months."



Location:
Datchet

Employees:
23

Products/Services:
Design consultancy work for clients in medical, consumer and other industries. Expertise encompasses industrial design, mechanical engineering and prototyping

**HIGHLY
COMMENDED**
DESIGN CYCLE TIME
REDUCTION AWARD

A FLEXIBLE DESIGN ARCHITECTURE HELPS CROWCON DEVELOP VARIANTS TO ITS RANGE OF PORTABLE GAS DETECTORS QUICKLY AND EFFICIENTLY. AND PROFITABILITY IS LOOKING INCREASINGLY HEALTHY, TOO

CROWCON DETECTION INSTRUMENTS

It's a gas



Location:
Abingdon

Employees:
200

Products/Services:
Part of the Halma Group, Crowcon develops portable gas detection equipment for personal safety, though has recently moved into flue gas analysers for testing the efficiency of domestic boilers

If you're waking up in the morning with headaches, nausea and an inability to concentrate, it might not just be the beer. Because these are also the symptoms of low-level carbon monoxide poisoning – from inefficient central heating boilers.

Stefan Kukula knows all about this, having fallen prey to the effects of a faulty boiler. As technical director at Crowcon Detection Instruments, he knows that his business relies on a growing awareness of gas detection.

"There's a big opportunity in China – which is why we're building plant there," he says. "Chinese-made gas detection equipment has a poor reputation; so, if we can produce it at the right price, we can compete."

The company's main business is in developing portable gas detection instruments. "Our key expertise is to integrate raw sensing technology into a piece of processing equipment and produce a clear, easy-to-use interface."

This is underpinned by an electronics platform called i-Module. It takes processing power away from the main board and puts it onto a 'mini-board' – to which an individual sensor is attached. Different types of sensor can then easily be added to a multi-gas analyser. Crowcon says this helps it to offer the widest range of gas sensing capability.

While new products account for around half of all sales, the profitability of these new lines is far higher. This is partly because they have been designed for cost in a way that older products were not. At the same time, better volume discounts on components and an improved supply chain have helped. Also, there was a large focus on new products – several of which have now come to fruition.

"Making a product as a platform means an initially longer development time, but follow-on products have shorter lead times," says Kukula.

The company has already developed a number of variants of its Sprint V flue gas

analyser, for example. The basic system allows heating fitters to adjust central heating boilers to increase their efficiency. On top of this, British Gas ordered a tailored version – which includes a number of bespoke features.

"We won a contract to develop a special version for British Gas," says Kukula. "This was a significant order for us."

The i-Module platform has helped Crowcon to bring new product variants to market quickly. The flexible nature of the architecture allows significant changes to be introduced with relatively little design input. For example, new, complex sensors could be added to the Sprint V range with minimal extra work, other than developing an i-Module for each specific device. Ordinarily, changes would need to be made to the main board.

However, while i-Module is perfect for Crowcon's current needs, the company realises that it may not always be the answer.

"If we want to go to big volumes, we might have to take i-Module functions back onto the main board," says Kukula.



THE EFFORTS OF EACH AND EVERY INDIVIDUAL CAN BRING SIGNIFICANT IMPROVEMENTS. THE BEST FACTORIES HAVE, BY MEANS OF EMPOWERMENT AND INVOLVEMENT, HARNESSED THE EXPERTISE, KNOWLEDGE AND CREATIVITY OF THEIR WORKFORCE

BEST FACTORY AWARDS 2007

Applaud competitive companies

This year's Best Factory Awards winners contradict the belief that you cannot be a successful manufacturer of products in the UK. They demonstrate that production in the UK can still be a profitable endeavour. This year's group of winners were profitable and growing, as a result of increasing sales at home and abroad.

The Best Factories were successful because they had focused on: developing high-value, high-technology products; making bespoke products; or manufacturing branded products.

Producing high-value, high-technology products enables British manufacturers to offer differentiated products, thus counteracting the low-price offering of competitors.

Rapid customisation is a critical competitive advantage, because customers will pay a premium to obtain exactly what they want, to their specifications and timescales.

Branded products are established through a distinct competitive advantage: for example, product performance reliability. Often the brand is built on design and manufacturing capability, therefore manufacturers in the UK can sustain profitability through the continuous improvement of brand features.

While the factories may not have adopted the same strategy, they do share several familiar characteristics; one important trait of the Best Factories is their commitment to continuous improvement. They do not make an initial improvement effort, reap the benefits and rest on their laurels. Instead, they build on the success and continue steadfastly with the improvement activity.

The cornerstone of continuous improvement is the people. It is through the efforts of every individual that improvements can be made. The Best Factories have been able, through empowerment and involvement, to harness the expertise, knowledge and creativity of their workforce.

The Best Factories recognise that to be successful at improvement requires the organisation to have a progressive attitude to training and development. This entailed them investing in extensive training and development of their workforce, especially in continuous improvement and team working skills.

Quality no longer gets the attention it used to, in some organisations. However, quality is dynamic; the level that delights customers changes over time. The Best Factory Awards winners recognise this and are focused on improving quality. They have invested in new process technology, updated procedures and practices, and improved training.

The Best Factories have developed production systems where material flows more smoothly. They have dealt with the factors that disrupt smooth flow, such as long setup times, poor layout and machine breakdowns. This has enabled them to offer their customers short delivery lead times and react quickly to changes in requirements.

Britain's manufacturing landscape has changed over the last ten years. However, the Best Factory Awards winners show that UK companies can be competitive – a fact we should all applaud.



Dr Marek Szwajkowski
Director – Best Factory Awards
Cranfield School of Management

BEST FACTORY AWARDS 2007

COLLECTING A TROPHY IN THE BEST FACTORY AWARDS ISN'T A DESTINATION, IT'S A POINT ON THE JOURNEY; A TIME TO TAKE STOCK OF HOW FAR YOU'VE COME AND TO CELEBRATE THAT ACHIEVEMENT

Britain's best and brightest



Chris Rowlands
Editor, *Works Management*

It's been a fascinating few months, judging Britain's Best Factories. Every company that has made it to the final shortlist can be justly proud of this achievement, since the standard is incredibly high. And I'm sure that these participants, like me, could extol the virtues of the awards programme – the benchmarking report, the judges' visit and, of course, the chance to celebrate success with the people from the shopfloor who make all this happen.

It's a privilege to judge the awards and this is the third year I've been involved. What's stood out for me in 2007 has been the real thirst for improvement shown by so many manufacturers. These companies are using every avenue possible to secure valuable tips and insights, whether that is through the Best Factory Awards, conferences, networking clubs, seminars or even articles in magazines such as *Works Management*. These firms are on a quest – and those that step up to the challenge are clearly reaping the rewards.

If proof were needed that firms are using schemes such as BFA in this endeavour, we need look no farther than this year's shortlist for the Most Improved Plant award. Firms are only eligible for this award if they have entered BFA on a previous occasion. This year, six of the total shortlist of 12 sites were vying for the 'Most Improved' crown. They have not only all entered BFA before, but have also won one or more category awards. A couple of these organisations even use BFA as a corporate benchmark, building it into the business strategy to help evaluate performance. They have clearly learned much from previous years and gone on to make more improvements before submitting themselves again to the judges' critical gaze. It is truly inspiring.

We've also heard from organisations that have entered BFA after attending other events and seminars. Several attended the Best Factory Conference and were spurred on by what they heard. Others have used numerous opportunities to network with their peers, such as our Lean Business events and the Manufacturing Leaders' Club. It's also gratifying to see that *Works Management* is a title viewed by many of the BFA entrants as a source of practical, incisive guidance on best practice for their factories.

The most interesting point for me throughout the judging visits has been witnessing this drive for improvement. No one talked of perfection, only the need to improve. And learning how – or even how not – to do this is a vital tool, wherever the knowledge comes from. Collecting a trophy in the Best Factory Awards isn't a destination, it's merely a point on the journey – a time to take stock of how far you've come and to celebrate that achievement. Then it's back to the real world to continue the quest for improvement.

I commend all the manufacturers that took the time to enter the Best Factory Awards. We can celebrate these businesses that are firmly on the road to world class: they inspire and motivate the rest of us.

WORKS MANAGEMENT AND CRANFIELD SCHOOL OF MANAGEMENT WOULD LIKE TO EXTEND THEIR THANKS TO ALL OF THE SPONSORS FOR SUPPORTING THE BEST FACTORY AWARDS IN 2007

SPONSORS' STATEMENTS



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Nina Whitfield, Marketing Sector Manager,
Manufacturing, O2



Productivity Europe is delighted to once again sponsor the People Management Award at the Best Factory Awards. We have been assisting companies to introduce best practice for nearly twenty years and, the more work we do with companies, the more we see employee involvement as the key to success.

As external facilitators, we engage people in process improvement activities, but it is the internal people management processes that sustain these activities and develop a continuous improvement culture.

The Best Factory People Management Award recognises this, which is why we will take great pleasure in presenting this year's award.

Malcolm Jones, Director,
Productivity Europe



TBM is the global leader at helping businesses achieve dramatic levels of efficiency and productivity, new competitive advantages, and sustained profit and revenue growth. TBM and LeanSigma strive for one goal: to achieve greater profitability, using fewer resources. By reducing waste, increasing productivity and promoting growth, we help our clients create sustainable, fiscally responsible businesses with greater employee satisfaction. Economic Value (EVA) is improved rapidly by leveraging existing human and capital resources, as well as operating-cost improvements, with reductions in invested capital through working capital and fixed-asset reductions, while the kaizen breakthrough methodology ensures that companies put to use their greatest assets: people.

Richard Holland, UK Team Leader,
TBM Consulting Group



Toyota is delighted to be associated with the Best Factory Awards.

As the global leader in materials handling, Toyota partners businesses across the UK, aiming to constantly improve the quality and efficiency of the materials handling process.

We support best practice in industry and applaud all the companies recognised this year. These companies have achieved greater productivity by looking at every area of their operation and considering the impact of each on the whole business.

Making the process flow efficiently and profitability is the key in achieving best practice.

Steve Hodgkinson, Managing Director
Toyota Industrial Equipment (UK)



Unite the Union is Britain's biggest private sector trade union. We represent two million members across every sector of the economy. Most of our members are familiar with the factory environment, but their experience of working in them varies wildly. That's why we are supporting the Best Factory Awards.

We promote best practice in industrial relations health and safety, and vocational training. We want to make all UK factories clean, safe and productive places that are capable of providing secure and rewarding employment into the future.

The winners of the Best Factory Awards show how this can be achieved and stand as an example for all manufacturers in Britain.

Derek Simpson, Joint General Secretary
Unite the Union



Wincanton is a European leader in the design and delivery of advanced logistics solutions. With a turnover of £1.9bn, the business employs over 30,000 professionals in 400 locations, with a passion for supply chain excellence and a commitment to adding value to its customers' operations. Our manufacturing business is perfectly aligned with the challenges of a global and demand-driven economy, servicing many of the largest household brands.

Wincanton is delighted to support the Best Factory Awards and celebrate the success of those businesses that are setting the benchmark in UK manufacturing.

Jeff Anderson, Managing Director,
Wincanton



Delivering Sustainable Improvement

- sustainable processes
- engaging people
- flexible support
- extensive experience
- long term relationships
- whole systems approach
- demonstrable results

Our success has been in enabling many of Britain's Best Factories to achieve sustainable improvement by engaging their people in the improvement process and developing reliable methods.

We then use focused techniques to deliver specific improvements in lead-times, changeover times and equipment performance.



Senior directors Malcolm Jones, Francesco Bevilacqua and Paul Quayle

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FOCUSING ON HOW TEAMS CAN SOLVE PROBLEMS AND DRIVE UP PERFORMANCE, THIS BUSINESS HAS ENJOYED GROWTH, LAUNCHED NEW PRODUCTS, BECOME MORE LEAN AND UPSKILLED ITS PEOPLE

RECKITT BENCKISER HEALTHCARE (UK)

Medical marvel

When it last entered these awards in 2002, Reckitt Benckiser won the Best Process Plant award. Assuming that mantle again this year, it has also shown much improvement right across its business, resulting not only in claiming the award for People Management, but also the overall title – Factory of the Year. One judge described the Hull site thus: “in terms of pharma, they are probably the best in the world; they are miles ahead”, and the employees recognise the standard it is now setting. As Bill Maxwell, planning and logistics manager, says: “We are rightfully proud of what we have done as a team – that includes everyone, right down to the shopfloor.”

Reckitt Benckiser, which can trace its roots in Hull back to 1840, has been on the current site since 1976. It is now part of its EU supply chain, supplying internal business units, with 40% exported.

Regional engineering director Garry Haswell describes the changes that have taken place: “We had to focus on JIT and velocity

through the factory.” But it wasn’t just new layouts, products or equipment. “We wanted to be clear what teams were responsible for. We had to upskill people.” So the company introduced annualised hours and craft skills on to the lines, in the form of manufacturing technicians.

The volume and number of SKUs have increased. New products have been launched, including ‘stick packs’ of Gaviscon, requiring a completely new machine – nobody had used stick packs for a pharmaceutical product before.

Every line has a plan and, from this, the manufacturing team generates a weekly/daily schedule, which is the basis for JIT deliveries of materials. “We have the ability to flex and respond to demand,” says Maxwell.

According to operational quality manager Breda Quinn, “without the people we wouldn’t be able to do any of this”. To help its employees understand the values of the business, a pocket guide explaining the core values and vision was given to each and every one.



WINNER
FACTORY OF THE YEAR

BEST PROCESS PLANT

PEOPLE MANAGEMENT



Location:

Hull

Employees:

210

Products:

Over the counter and prescription medicines

Turnover:

£61m

Highlights:

People; upskilling; site performance; continuous improvement; cascading values; KPIs; communication; safety and environmental



To ensure people are developing, reviews are undertaken regularly and there is a training plan, by person, by line. Continuous improvement is well established. KPIs (Key Performance Indicators) in the business include quality (QRFT), cost, customer service, waste and OEE, displayed on simple scorecards in the plant. Other boards around the site display the progress on initiatives such as SMED, maintenance or quality projects.

The Buprenorphine area manufactures a controlled drug that is an opium-based substitute for heroin. Tablets are made at rates up to 2,000 tablets/minute, then packed. The area is security controlled and atmospherically sealed.

Crew leader Jo-Anne Pick says: "We increased OEE [from 55% to 67%]; we involved the team – all the support – and root-caused the issues in the area." The work included a pareto analysis of downtime and now "standardised SOPs", she adds.

The team members are described as "a very flexible cross-trained group" – for example, Maureen Morgan, who has been with the company for four years. She describes it as "brilliant, a nice place, with good bosses". Flexibility means she can work in other rooms as well, she says – and be involved in different parts of the process.

Manufacturing technician Andy Leach plans all the product changes – a complete blister pack change can take hours, but the company drive on OEE included improving changeovers: "We reduced from six hours to four hours," he states.

Reckitt Benckiser uses an audit called SOCO – safe organised clean operation –

which has a wider scope than just 5S. Its focus on health, safety and the environment has meant new compressors have been installed to save energy, and effluent and waste are closely managed.

In Liquids, products include Gaviscon and Dettol, with Lee McCann the product supply leader. There are various filling lines and a processing area, which has seen an 18% volume growth year to year.

Describing his metrics, he highlights "service, quality and cost – and the driver for all: people".



Lisa Adams is the area team leader covering tube and sachet lines packaging liquid products. "There are two people per line," she says, "a crew leader and a manufacturing technician." The people on the lines decide how they are going to run over the next three to four weeks. "They manage their own hours."

McCann adds that the next challenge is a hike in volume, hence the need to drive OEE.

Crew leader Mark Smith describes his line as "one of the most efficient in northern Europe. We were given the opportunity to take ownership of the line", which is why the efficiencies have gone up, he says.

And he is being trained. "I have just completed an NVQ in business improvement techniques," he adds. Of the business itself, he enthuses: "To be honest, it is brilliant. They recognise people want to achieve and they give them the skills. I've only been here four years, but I'm already a crew leader and I've got prospects."

In the dry process area, Gary Wilkinson and Steve Seaton have worked on decreasing waste. It was at 3.7%, so they implemented monitoring systems to check where the process may need attention. They also introduced "best press settings". The result? Waste is now down to 1.7%.

Finally, Robert Gallant is a manufacturing technician on a dry Gaviscon line that had a problem with tablet delivery. The team worked together on resolving this, changing the tablet feed angle. After trials, which were very successful, he says, no feed problems have since been seen, with the result that "the annual saving could be significant".



Supply chain challenges



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AFTER INVESTING IN THE SITE AND THE PEOPLE, THE NEXT DECADE FOR COCA-COLA ENTERPRISES PROMISES TO BE AS SUCCESSFUL AS THE LAST, WITH AN EXPANDING RANGE – AND PERFORMANCE FIRMLY ON THE RISE

COCA-COLA ENTERPRISES

Improvement still fizzing along



Coca-Cola Enterprises' North London operation has gone through "a decade of success", says operations director Richard Davies, with growth in existing brands, an expansion of the product portfolio, improved efficiency and effectiveness, and changes in the working approach. In 2002, it won the Best Household and General Products Plant – a feat repeated this year, as well as being Highly Commended in the Most Improved Plant award.

A new shift pattern was introduced in 2005, following feedback. "From a previous BFA audit," says Davies, "we looked at shifts. But we asked our customers what flexibility meant to them." And this helped to define a flexible shift pattern. It is aligned with demand, has uplifted the capacity and removed overtime – negotiated with the union on site, the TGWU, with whom, Davies says, "we have a very strong and positive relationship".

Davies says Coca-Cola has built a long-

range plan for the site. This helped when it came to the significant investments needed, in terms of land and facilities. This included the ASRS (automated storage and retrieval system) and new machinery. The ASRS venture was supported by the London regional development agency (LDA) and more than £25m in total was invested. The ASRS has 12 cranes and is nearly 40m high, with in excess of 25,000 pallet locations. The cranes put away and pick out in the same movement, and a product spends no more than 12 hours in the system.

The site manufactures products for various channels, with volume significantly up – from around 30m units three years ago to more than 44m today, including delivery formats such as MUs – the merchandising units rolled straight in to supermarkets, from which we, the consumers, pick our bottles of Coke. The product is supplied in up to three-litre plastic PET (Polyethylene terephthalate) and the

iconic glass bottles, with the range including the new Oasis still drink.

Beverages are mixed in the process area, with one pair of vessels for each line, with a maximum capacity of 28,000 litres per tank. A PC controls the process and access is only gained using fingerprint recognition.

The company has invested in bottle blowing – taking PET pre-forms and blowing up to a full-sized bottle – a total of around 500,000 every day. Innovations here have focused on reducing the pre-form weight, with a 25g (more than 33%) weight reduction on some forms. Gary Wright, an operator in the area, pointed out a new machine being commissioned. "I can see the investment and the markets heading in new directions, like 'stills'," he says, referring to the new Oasis product and line.

Water and CO₂ are added, and the product is filled into bottles and packed. For example, one line – line 2 – can make 24,000 bottles



WINNER
**BEST HOUSEHOLD AND
 GENERAL PRODUCTS PLANT**

**HIGHLY
 COMMENDED**
MOST IMPROVED PLANT

per hour. Yield on this line is 99.95% – up from 99.16% in 2001.

The filler is the bottleneck, so capacity has been designed in after the filler, in labelling and packaging, to ensure it is kept running at the maximum efficiency when there are changeovers.

At packaging, the amount of stretch wrap used has been reduced. It previously used 400g of material – this is down to 200g, “hence saving money, saving waste,” says Trevor Newman, manufacturing manager for large PET.

In terms of waste and recycling, there are separate streams for card (baled or loose), wood, plastic film, dirty PET bottles, and the company has moved to returnable plastic bobbins for film (rather than card). Only 56t of waste has gone to landfill in the past year – below the target of 75t – while more than 99% of waste is recycled.

Behavioural safety is important on site, such as encouraging use of handrails, taking one step at a time and sticking to marked footpaths.

The lines are laid out back to back to help with labour allocation. Line 6 is the iconic glass Coke bottle line. Improvements here included solving bottle breakages and reducing noise. “We don’t mask noise, we engineer it out,” says Steve Walters, quality/safety/environmental manager.

SMED has been employed on cleaning processes. On one deep clean process, carried out every week, there was a 17% reduction in the time taken. And now, on a packer, it could take just 15 minutes to complete a changeover between different-sized products.

Senior technical operator Gary O’Leary has been with the company for 11 years. This is an engineering role, he points out, keeping the line running and ensuring the prevention of breakdowns. “Preventative maintenance is one of the main things that we are trying to do,” he explains. The asset care department plans the PMs, which O’Leary carries out when a clean is underway; or by following a ‘modular maintenance’ approach, taking one part of a machine out in its entirety at a time, rather than waiting for a shutdown and dealing with all parts of a machine. “The way we maintain machines, two weeks out is not necessary any more,” O’Leary says. Operators do smaller maintenance jobs – lubrication, for example – and, if there is a breakdown, he performs a root cause analysis.

O’Leary’s own progress through the company has been exponential. He started as an FLT driver, saw a job on the shopfloor and then, he says, “I got interested in how things work. The company supported me through City and Guilds in engineering, pneumatics, etcetera”.

“People’s attitudes have changed,” he adds. “It is more like a family, more friendly – the shift pattern has helped.”



Location:
 London

Employees:
 200

Products:
 Branded soft drinks in PET and glass

Turnover:
 Not disclosed

Highlights:
 Waste and environmental; performance improvement; working patterns; managing growth; investments



ULTRAFRAME (UK)

Raising the roof



“We are seen as the highest quality... and over one million classic conservatory roofs have been installed in the last ten years.” That’s how operations director Mike Price describes this engineering business’ original and best-selling brand. Indeed, for the whole range, the volume is even higher, with a complex distribution chain, including complete roofs, and parts or kits to fabricators, installers, stockists and merchants, with 60% of volume being components and 40% complete roofs.

There has been much work on the supply chain. Sian Howitt, head of supply chain, says of the PVC extrusions suppliers: “We are trying to work with them to encourage them, to increase changeovers, and to reduce costs on waste and stoppages.”

According to production manager Neil Bancroft, “significantly over the last three years, we’ve done lots of work... flowing product through the factory and taking waste out of the operation”. It has become increasingly lean, using VSM (value stream mapping), and has a very detailed map depicting the current state and a future state vision as well. Adds Price: “We are on this journey to the future state vision; we are certainly not there yet.”

But many improvements have been made, as Howitt explains. “We now have 12,000 less SKUs by reviewing obsolete stock in 2006.” Her team “are actively managing risk all the time,” with suppliers informed as to how they are performing. Distribution has various KPIs in place, “to focus improvement and understand where we are”, she adds. The project to outsource distribution “was the single highest delivering project last year”.

There are environmental, H&S, KPI, and news and project boards: “Our bragging boards”, as Bancroft describes them, “actively encouraging telling good stories.” The KPI board shows the various performance indicators, including roofs/man, customer

service, quality, back orders and absence: 6% three years ago and now less than 3%.

The way in which people work has also changed: “Almost all operators are on annualised hours,” explains Bancroft. One such operator, Ben Eatough, has worked here for eight years, four in the machine centre. “I wanted to get more into computers,” he says. “I am left with responsibility and I like that. We are relied upon.”

The Uzone cell uses trolleys that act as a visual indicator – “when they are full, it encourages the operators to drop back and help out”, says cell leader Warren Kellow.

Katie Bolton, the planner in the Wendland cell, “takes the orders, organises programmes for the machines, drawings, and orders material to come in just before planned use”.

John Potts is cell leader in roof build, with 45 people across two areas, flat pack and pre-erect. “It is unrecognisable from four or five years ago,” he says. “It is lean, but it is common sense.” Going lean has driven up productivity across the two areas by 15-20%.



Location:
Clitheroe

Employees:
418

Products:
Conservatory roofing
components and systems

Turnover:
£50m

Highlights:
VSM; lean; rapid customisation;
teams; communication; supply chain

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WITH A FOCUS ON SUPPLY CHAIN EXCELLENCE, APPLYING LEAN AND USING IT HIGHLY EFFECTIVELY, THIS EVER-CHANGING BUSINESS IS GUIDING ITSELF TO FURTHER IMPROVEMENT

SELEX SENSORS AND AIRBORNE SYSTEMS

High on the radar

“We are a changing company,” says operations director Graham Russell. And he has a point – the business has been reinvented a number of times in recent years. In 2004, it won Best Electronics Plant as BAE Systems Avionics and two years ago was bought by Italian group Finmeccanica. It has also invested heavily on site, with £80m put into the 60-year-old facility, including a total rebuild in 2000. Now, it wins its sector award again and adds the Best Supply Chain award.

The site focuses on four product sectors: AESA radar, Eurofighter radar, electro-optics and laser systems: “We know our niche; we know what we are good at,” says Russell, highlighting that it tends to focus on the defence industries. Supporting these product sectors are centres of excellence – laser, microelectronics, AIT (assembly, integration and test) and now its new logistics hub. This brought together storage of materials from four warehouses, which resulted in a big reduction in the footprint for materials (60%) and operating costs (55%). It’s completely



computer controlled through an electronic system, as Russell explains. “We have created an eFactory approach... a paperless manufacturing system.” Why has it taken this approach? “The complexity of the work we do,” he says, “with so many transactions a day. So movement of material is crucial and you really need management tools to help manage that situation.”

The product-focused approach has led to IPTs (integrated product teams), as operations capability manager John Reid explains. “At sector level and at factory level, all the teams are product focused. There are hotdesks and a war room for each product. They all take ownership as a group.”

Lean has been in place since 2004 – there was a big drive from previous owners and the team on site have continued this. “We realise

that we needed to change, needed to get rid of waste,” adds Reid.

Doug Imrie is head of strategic procurement. The company is a second tier supplier and has developed a supply chain excellence programme, with quarterly or monthly supplier reviews and supplier engineers to help “take pennies and pounds out of the material,” says Imrie, who adds that the programme “drives good practice”.

It has rationalised machining companies from 40 to seven and made savings in the supply chain. Indeed, in 2006 these accounted for 20% of the targeted spend.

On site, it is not just products that are innovative; the processes are also. One such process has been developed in conjunction with the USA machine supplier to manufacture laser optics to the minutest precision that’s

WINNER

BEST ELECTRONICS AND ELECTRICAL PLANT

SUPPLY CHAIN



highlighted that implementing an IT system on the Kardex vertical carousels has removed 56 keystrokes previously carried out by the operatives.

MEG is the microelectronics group and the manager here is Bill Sinclair, who has 55 people in this area on a variety of shifts. He describes this area as “high technology and high risk”. Even though some products in the area have a ‘touch time’ measured in weeks, there is a focus on product flow.

John Penman, a team leader in this area, recognises how his process must be balanced to a takt time. He has worked for the company for five years, initially as an industrial engineer. “I became interested in looking at process,” he says. Being a team leader, he adds, “gives you a position to influence change”.

Angie Taylor, a manufacturing technician in MEG, has worked here for 22 years. “I enjoy it, we all get on; the people are nice and the company is good to the employees. We work well as a team,” she says. Again, IT plays an important role. There is an ‘electronic router’ – a paperless version of the old route cards and part of the eFactory – and a number of screens showing progress in the area visually.

Graham Black, an apprentice in his third year, is staying in MEG, as he can acquire a number of skills in this one area. He says Selex is “a good opportunity; they offered further education and it is a good start”.

Rab Mcleod is the senior supply chain logistics planner, responsible for the kitting. “We make sure we are meeting the completion dates and that everything is shortage free,” he says. He looks at the IT system ‘load board’, then checks on progress of shortages with the responsible managers. He has worked for the company for 12 years, starting out as a technician apprentice. “I enjoy my job,” he says. “There are good opportunities as well.” He and 10 others are now doing an operations manager diploma on day release, supported by the company.



imaginable – 3mm components aligned to 50 nanometre tolerances. “Nothing comes close,” says EO operations manager Dominic Philpott. “It is a world beater.”

Operations systems and logistics manager Mike Nesbitt is responsible for all inbound and outbound materials. The logistics hub is a completely new building, handling 3,000 deliveries per month. “We wanted to make it more visible, minimise the material movement and have all functions in one facility,” he says – receiving, inspection, kitting, despatch.

Logistics operative Jimmy Flynn has worked for the company for 25 years and describes the IT systems now in place to aid material control as “a lot better; the traceability.” He can move around different roles. “It is flexible in here,” he says.

Logistics team leader John Richards

Location:
Edinburgh

Employees:
1,820

Products:
Airborne radar and sensor systems for the defence avionics industry

Turnover:
£296m

Highlights:
Supply chain rationalisation and cost savings; eFactory and logistics hub; training; application of lean

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EXCEPTION PCB

Exceptional performer

“To be selected as a potential finalist in this year’s Best Factory Awards is a great honour and a true testament to the staff, commitment and not forgetting the customers that make us what we are today!” says Garry Myatt, Exception PCB’s sales and marketing director. And now, for potential finalist, read: ‘Winner, Best Small Company and Judges’ Special Award’ and Highly Commended in its sector – Electronics and Electrical Plant.

Private and under UK ownership, the company’s managing director Gordon Holden, says it is “the largest single site PCB manufacturer in the UK”. It makes bare boards – laminates, not populated PCBs – and is growing. It invests in plenty of PR and marketing, has a very active website and takes part in trade shows around the globe. The result is that the £14m turnover is growing fast and the number of customers, and countries supplied, across the range of products and

sectors are similarly expanding.

“We follow our customers and absolutely listen to them,” says Holden, adding: “Time to technology’ is important – that is, getting new technologies and producing them very quickly.” Certainly, that is why it won The Judges’ Special Award – for rapid product customisation. “We are the fastest in the world,” says Holden in deadly seriousness. And it is developing. “The development work going on is really critical to keeping this company prosperous and profitable. Everyone can do layers now. What people aren’t good at is sequentially laminating. We can now do 50 micron air gap, track to track, and have produced down to 30 microns.”

From a sales perspective, this is great, as Garry Myatt explains. “We never load the factory greater than 65%, which allows us to be flexible and have a fast turnaround.” OTD means to a time (not just a day) and, even with this strictest of measures, is running at 94%.



WINNER
BEST SMALL COMPANY

THE JUDGES’ SPECIAL
AWARD

**HIGHLY
COMMENDED**
BEST ELECTRONICS AND
ELECTRICAL PLANT



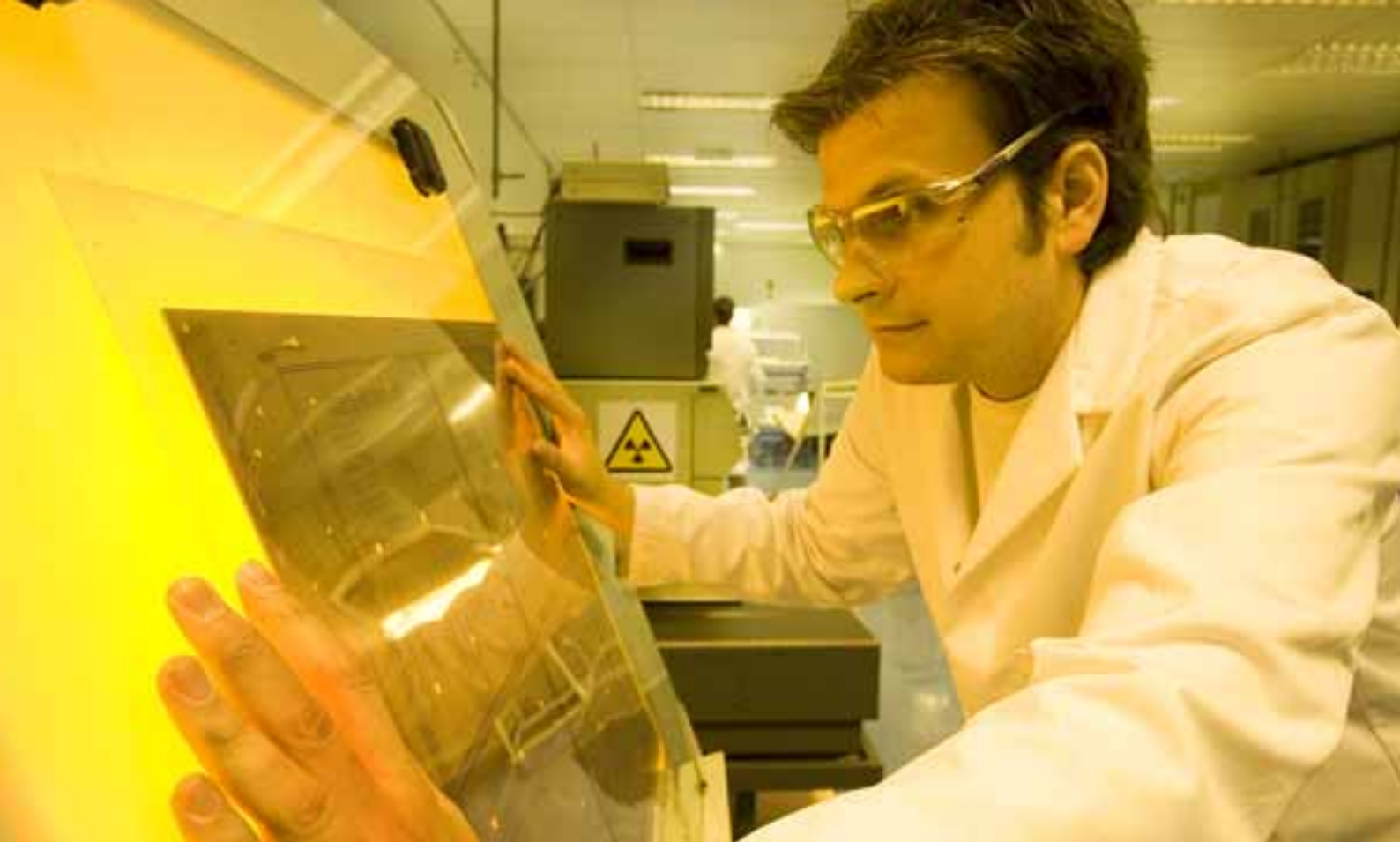
Location:
Tewkesbury

Employees:
150

Products:
Printed circuit boards

Turnover:
£14m

Highlights:
Rapid customisation; use of technology; focused and skilled operators; re-layout of site for flow



The products at one end of the scale, explains Holden, can be for supporting test – “one board can be very short leadtime, maybe 48 hours. At the other end, maybe a batch of 1,000 four layer boards. We are a good example of high mix, low volume.”

The layout was typical of a plant that had grown organically: “a nest of vipers,” he adds, referring to the product flow. Now, all on one level, with various moves and new equipment, it is “far more streamlined”.

Some copper foils and laminates are on consignment from the supplier. Chemicals are a similar story, with a supplier hub also situated locally. The site runs 24x5, with a half-hour overlap between shifts “for communication and cleanliness”, says manufacturing manager Brian Killick. There are seven cell managers, with team leaders beneath them. On the shopfloor, there are a number of Polish graduates, described by Holden as “superb”.

First in the process comes ‘laminare cleaning’, using chemicals. The route card and the laminate are delivered from stores. Gillian Davey is the operator here and has worked for the company for 16 years. The process is confidently under control. “I usually have a good day,” she says.

In the clean room, Neil Young is the cell manager. Laser tools are used to reveal the tracks on the boards and, as some lasers have a finite life, it is important that “we have good agreements with the suppliers”, he says. The room is bathed in yellow light to prevent



overexposure of the films. Operators are responsible for loading the machines with panels, running the process and cleanliness. The newest machine here can deliver the 30 micron air gap between tracks.

The next stage of the process – to ‘develop’ the film, using chemicals – is tightly controlled. This is followed by an etching process, with the copper gone and the remaining copper protected by the ‘photo resist film’.

After that comes AOI – automated optical

inspection – where Hazel Parrott is a team leader. She has a schedule and “checks what needs to be done first”. She writes her plan on a noticeboard, so the operators know what to do next. She has to “liaise with other areas, sort out any data problems with the inspection programmes,” and she sends an information email out to the QTA (Quick Turn Around) list when an item leaves the AOI. QTA is a large list that receives information on progress, including all the managers on their blackberries. Parrott has been a team leader for three years. “I do like it,” she says.

“I’m good at organising. It is the best job that I’ve ever had. You learn something new every day; it is very interesting.”

Lukasz Hass is the team leader in bonding. Once the laminated layers are built to the defined structure, they are put into a hot press. “The information on settings and duration comes from engineering,” he says. The panels are then cooled.

Every board can follow a different path, according to its design. For example, laser drilling – much quicker than conventional drilling – equates to 20 holes/second, which for 10,000 holes takes less than 10 minutes (it would take 2.5 hours on a normal drill). Once through all processes, the boards are tested and inspected.

Matt Edmundson is the test cell manager: “If there are more than 50 boards, a fixture will be built by the test engineer to test a board in one or two seconds, rather than 15 minutes on other test rigs,” he says. It’s all about speed.

How's this for a World-Class Report?

Selected Financial Data

Net sales up 35%
(vs. 8% decline three years ago)

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(vs. 65% decline three years ago)

Earnings per share up 132%
(vs. 64% decline three years ago)

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(in three years)

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THE WINNING FORMULA FOR ROCKET MEDICAL HAS BEEN TO ENHANCE ITS OPERATIONS THROUGH CONTINUOUS IMPROVEMENT BY FOCUSING ON KPIS EVERY DAY AND INNOVATING TO MAINTAIN PROFITABILITY IN THE MARKET

ROCKET MEDICAL

Innovation and improvement reach blast-off

“The measurement of success is profitability,” says MD Robi Bernberg. “Then there are lots of other measures, like pride in working here, motivation, a happy workforce.” Part of understanding this is for the company to benchmark itself through BFA. It did so in 2004 and production manager Steve Brown sees entering again as “a good challenge. There is still a lot to do, but we have done much already”.

Team leader Kellie Ridley supports this view. “We’ve seen a lot of changes happen; we are much more professional and it is a great company to work for.” And the changes have had an impact, making this the 2007 Most Improved Plant and again, as in 2004, securing the Innovation Award.

The company opened the Washington location in 1972 and manufactures 95% of its devices on site. Export accounts for 25% of its turnover and the NHS takes 95% of the UK volume, either direct or through NHS Logistics.

The approach is to sell a solution to a surgeon – sometimes developed particularly for them – then supply into NHS Logistics for delivery to the hospital. The key differentiator is seen as ‘service and support’, something that operations director Les Todd explains as “how the Washington factory can turn around bespoke device”.

He continues: “The sales force is talking to practitioners and forever coming up with new ways of doing procedures.” They work hand in hand with clinical people and the ideas are brought back for new products. “Time to market for a new product could be typically 14 months. We can do things in a month, with our ability to manufacture bespoke items.”

The products are, in the main, known as catheters – plastic tubes taking fluids in and out of the body during or after surgical procedures. To supply this market, the business has, in the past, tried to keep products in stock, but admits it “failed dismally”

and so talked to the customers, asking what they wanted. This resulted in the top 50 products (accounting for 50-60% of sales) being in stock – and much improved service.

Innovation is clearly seen as separating out this business from its competitors. “We look at designing and developing products that are difficult to sell,” say Bernberg – seeking out those niche markets. His vision is all about innovative products. “They are of huge importance,” he says, adding: “Manufacturing flexibility gives us the capability to deliver.”

According to sales and marketing director Stuart Hastings, “new products are about 15%

of sales,” adding that the business plan calls for a spend of not less than 20% of development on innovation. The size and degree of innovation in the projects is going up, too. “We used to do anything that came along,” states Hastings. “Now we have guidelines” – a detailed control system, with a stepped and gated process.

Product innovations are generated in areas where a new market can be found. As there is pressure to get people out of hospital beds and back home, products are developed that can help that process: “The driver was to look at our market position,” says Hastings. Other





WINNER
MOST IMPROVED PLANT

INNOVATION

innovations include improving products that exist in the market or providing simple items to help procedures.

The combined engineering/design/marketing department has responsibility right up to the pre-production trials. It has a prototype printer, powder based, to generate prototype parts. As design manager Dave Hill explains, “this helps shorten the development time” – and they have something concrete to show to the customer.

On the shopfloor, use of 8D to solve quality problems in a standardised way has proved beneficial, as has re-writing SOPs – “to

manufacture in the best way,” says Brown.

Manufacturing starts with plastic moulding; Brian Gee is a shift supervisor who has worked here for four years. “It is relaxed; they listen to what you need,” he says.

The schedule tells him what to make, which he then transfers on to a schedule board. This clearly and visually details “what is running, under maintenance, waiting for materials and what is the priority”.

The clean room is the main assembly area. David Davison, team leader of the chest drainage team, has been here 15 years. He follows works orders, which include all details on the process, parts, labels and any specific training needs. “If we do all the schedules, we go and work elsewhere,” he says.

Davison operates a communications board that incorporates 5S standards, and quality and efficiency measures. He “talks the team through the board every day”.

Kellie Ridley’s team is IVF. She has worked here for 30 years. “Efficiency and delivery were poor,” she says, but not now. Susan Brown is an operator in IVF, having worked for the company for 14 years.

She has her own signed-off training matrix, follows the works orders and describes a trimming operation that she says “has been made much quicker”, highlighting just one of the improvements in the area.

John Hawthorne, team leader in the machine team, has two machines packing various implements.

“There is a PM schedule for each week, which takes 15 to 20 minutes. It includes a visual inspect, checking air cylinders, e-stops, etcetera. It does help us spot damage on the machines.”

Once packed, items are then sent for sterilisation and are returned to the despatch area. Paul Butcher is a despatch clerk. When picked, the pickers check and pack each other’s orders. The pickers, he says, “came up with that idea to prevent errors”.



Location:
 Washington

Employees:
 99

Products:
 Plastic components for sterile medical devices

Turnover:
 £9m

Highlights:
 Innovation; rapid customisation; productivity improvement; communication boards; committed workforce



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SAFETY AND ENVIRONMENT FEATURE STRONGLY AT SHARP INTERPACK, AS DOES A FOCUS ON THE PEOPLE IN, AND LOCAL TO, ITS BUSINESS. ALIGNED WITH THIS IS IMPROVED PRODUCTIVITY THROUGH 5S AND SMED

SHARP INTERPACK

A safe lean-and-green package

Sharp Interpack could be described as self-aware. It knows what it needs to do to improve, with its people; to be safe and environmentally friendly; and how to integrate with the local community. Operations director Phil Mather explains: "We are very keen on all the lean tools; we do lots of in-house and external training."

The company does work hard with local colleges and schools – from offering work experience, through to starting its first apprentice on site since "about 23 years ago", says manufacturing manager Paul Roberts. It also supports many local teams and charity events, and runs a residential committee with other businesses based in this residential area (the businesses were here before the houses).

Now privately owned, it was part of Rexam

until 2006. "The company supplies plastic food trays to the UK retail food industry," states managing director Andrew Copson. "It is profitable and growing, I'm pleased to say."

Products are meat and poultry trays, mushrooms and other produce trays, manufactured using a proprietary process that is extremely important to Sharp Interpack. 'Industry standard' conventional thermoforming is extrusion, storage, forming, cutting and packing, with manpower, WIP, energy and waste all at certain levels. The company has invested a lot of time, money and effort in its rotary process, and into lean manufacturing. The result – a more efficient use of manpower, less waste, lower energy use and no WIP. All scrap, for example, is automatically recycled into the process, achieving an environmentally sound operation.



WINNER
HEALTH, SAFETY AND
ENVIRONMENT
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BEST HOUSEHOLD AND
GENERAL PRODUCTS PLANT



Location:
Yate

Employees:
161

Products:
Produce trays for the retail food industry

Turnover:
£23m

Highlights:
Safety culture; dealing with environmental and local responsibilities; 5S; SMED; performance improvements; rapid customisation



And “the people around the process are as important”, Copson adds.

The site makes in the region of “15 million plastic trays a week,” says Roberts. There are 25 to 30 changeovers a week, so SMED techniques are very important to them, as is OEE, which has risen by 4% during the last year.

In customer surveys carried out by the company, it is continually highly rated, in terms of quality and service, both of which are key in winning orders in this market. These factors both influence the efficiencies of the customers’ packing lines, hence the importance.

There are other drivers as well. “The number one strategic issue now is the environment and how it is viewed,” says Copson. “We have responded with a bio-degradable pack.” The site recycles more than 99% of its waste and has reduced solid wastes by 33% in 2006.

Lean encourages improvement, as Mather explains. “We have a ‘hopper’ of lean projects running – we come up with savings, and keep the hopper full.” It has run a cardboard reduction project, which provided cost reductions and benefits for customers’ storage.

Service is all about OTIF, and the company sources its own local and regional hauliers, with OTIF up by more than 99%.

But a safety culture is also in place here. In Copson’s first week as MD, in November 2005, there was an LTA. The company ended up in the magistrates’ court – a sobering experience for everyone involved. It was the last LTA on site. “We don’t tend to produce missions and values, but, if we had a value, it would be that we want people to leave the site as healthy as when they arrived,” he says.



The company is about to celebrate reaching 500,000 hours without an LTA. Of the KPIs that are measured, “safety, quality, waste, profit... safety comes first,” says Roberts. Managers carry out a daily safety audit; team leaders, two per shift.

“5S, SMED, TPM – all have safety implications,” he adds; and so can help. First aiders wear a green hairnet, instead of a blue one – instantly recognisable.

Human resources manager Angela Jones says that the H&S culture is helping other areas of the business, too. “Absence is low – 1.9% currently – and this is due to good

management and looking after the wellness of the people,” she says. Occupational health is in place “and the employees have made suggestions as to what they would like the nurse to include in the screening – eg, smoking or cholesterol.”

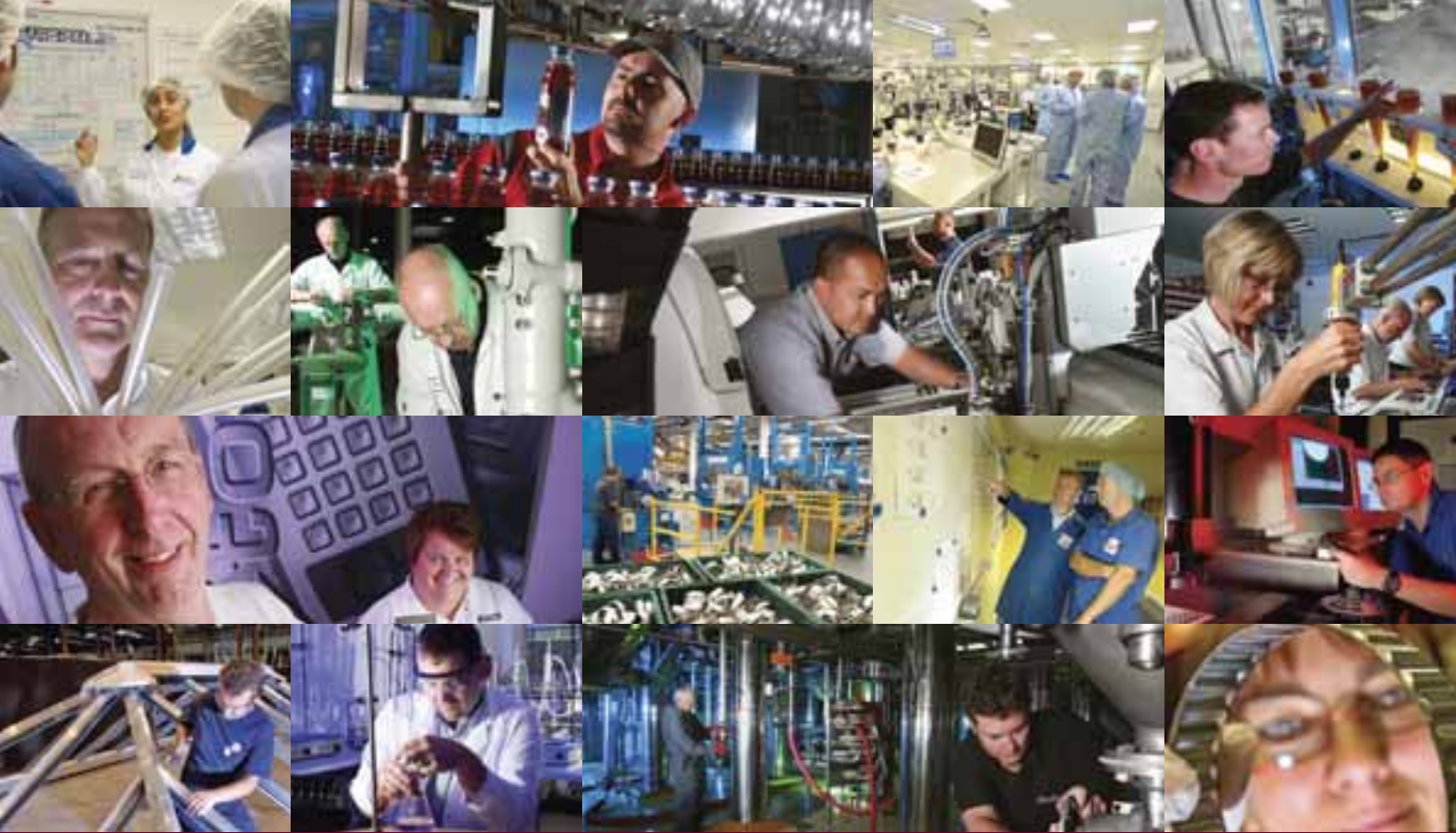
“People are rotated every four hours,” she adds. “They all move down one machine.” This helps reduce risk on manual handling and, for ‘team support’ such as Dawn Porter, “makes you more aware.” She really enjoys working here: “the people are friendly; it is nice and clean”.

According to Jones, “our biggest success came from the 5S methodology”. This hasn’t just made the shopfloor clean, tidy and well laid out, but has also improved safety. At the packing end of the process, handling aids are used. These include scissor lifts in the floor to aid operators load bags of trays to a pallet at a suitable height.

A major changeover, including tooling and material changes, is now four hours, says changeover coordinator Dave Appleyard – reduced from five hours in 2006 and nine hours before the SMED programme started. “We changed from bespoke packing chutes to standard, colour-coded air pipes and use transfer tables for tooling,” he explains. He has regular SMED meetings with the teams, and is making the procedures and alerts more visual.

Shift team leader Steve Venn has worked here for 14 years, four in his current job. When asked why he took on this role, he laughs and says: “I dunno! Sometimes I say, ‘oh, what have I done!’” But then, smiling still, he adds: “I enjoy the day-to-day running of the factory.”

Nick Knight is a senior team operator with a focus on changeovers. “A lot is down to planning,” he points out.



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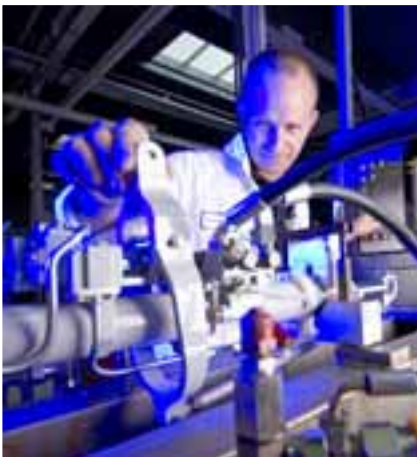
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BEST ENGINEERING PLANT

BY USING THE PRINCIPLES OF LEAN, AND INVOLVING ITS EMPLOYEES IN THE PROCESS, THIS BUSINESS HAS CHANGED AND IMPROVED, WITH TRAINING NOW A FUNDAMENTAL BUILDING BLOCK

APPH RUNCORN LANDING GEARS

All geared up



Location:
Runcorn

Employees:
91

Products:
Aircraft landing gear systems and associated hydraulics

Turnover:
£20m

Highlights:
Training; lean; quality; control of process area

“A PPH has manufactured landing gear for fifty years. Our reputation is that we are proactive, rather than reactive,” says divisional managing director Dave Haslam. “We are a systems integrator. We will supply a hydraulic system for an aircraft in totality.” The company targets niche markets: business aviation, military – fixed and rota-wing. But Haslam acknowledges: “We’ve got to change as the market is changing; manufacturing is changing.”

So the business undertook value stream mapping (VSM), mapping the current state, then the future state. Manufacturing manager Ken Livingston explains: “VSM can take a couple of days, so we built a training room to do VSM. We bring in anyone who has an input to the system.”

Technician Aaron Edwards was a part of that process: “We set out the cell for less walking, with everything to hand.”

In the APPH group, operations manager Mike Murphy says: “This site is the custodian for lean manufacturing.” Cells are defined by product group. As Livingston points out: “We focus on visual management – from the board, you can see what the cell is doing.” Jigs are designed to be ‘zero set’. “Why waste time setting with spanners?” adds Haslam. And all tools are to hand on shadowboards. Team leader Steve Rawlinson says: “With lean, you aren’t spending 10, 20 or 30 minutes looking for tooling.”

Steve Grosart is the cell leader in Hawk and Boeing cells. He has worked here for 34 years, moving from fitter to foreman – working his way through the business. “Training is crucial,” he says. A skills matrix is displayed in the training room, with a target set for how many technicians can build how many types of units.

Simon Price is an apprentice who decided to join APPH after doing some research: “I checked on two companies; this one seemed more interesting.” When he

completes his apprenticeship, he will be a fully trained technician.

Team leader Dave Smith, previously a technician, has worked here for 16 years: “Lean, and training, helps,” he says. “They’ve been good to me. They paid for me to go to college and do a HND in manufacturing engineering.”

Steve Kitts, a new team leader, is doing a HNC in manufacturing engineering at night school. “I want to progress, push on, and the company will support me.”

The process area has an operation sequence board, showing each component, the quantity and process steps required, to show what the priorities are. This area is a good example of how to handle chemicals, with, for example, a closed loop system for chrome and nickel.

Jan Scullion picks kits for the shopfloor and for sales orders. She has worked here for three years, she says, putting in 25 hours per week: “They are flexible, they are friendly, they care; it is great.”



'MOST IMPROVED' FOR KEYMED EMBRACES QUALITY, COST AND DELIVERY – ALL BACKED UP BY THE MOVE TO A NEW 'CLEAN ROOM' BUILDING AND THE CHANGE TO CELLS, INSTEAD OF FLOWLINES

HIGHLY
COMMENDED
MOST IMPROVED PLANT

KEYMED (MEDICAL & INDUSTRIAL EQUIPMENT)

Quality is the key

Part of the Olympus group, the company is once again, as it was in 2006, Highly Commended in the Most Improved Plant award. "We learnt a lot from the visit and the benchmarking report," says Mike Skelt, head of manufacturing. The company is still improving, now with a new site – the very impressive and environmentally friendly Medical Device Manufacturing Centre (MDMC) – to add to the existing plant and the company HQ. "We are the biggest manufacturing employer in the town," says Skelt. It embraces products from medical workstations and endoscopic ancillary equipment, to pumps, industrial boroscopes and HSV cameras.

The business strategy is to look at emerging markets, but also being aware of the threats of copying. Ian Ross, head of industrial product development, expands on this: "We have about 50 patents, about 20 registered designs". Mark Jackson, head of medical product development, adds: "We are working on improving the protection of IP and that is paying dividends."

Skelt adds: "QCD is critical to us. We want to be one of the best Olympus factories, not just catch up our colleagues. We use the Olympus organisation as a benchmark and undertake our own benchmarking, too."

QCD have been drivers for the MDMC. "One complaint is one too many," states Skelt, and now quality performance is up to 99.77% RFT, while cost reduction achieved is more than 20%. It is a clean room environment. In goods-in, Martin Roffey inspects externally manufactured components. The system tells him the amount and frequency of what to check, by supplier/part. He then labels and loads to a trolley. "I enjoy it," he says. "It is a nice building and clean!"

Workstations are made in the cells, fed by line feeders. Gavin Hardyman is the team leader here. He has "one man per cell, with a clear daily plan" and can see visually from each cell how many have been manufactured.

Richard Chapman is the team leader in accessories. Each cell can do various products, with tools held on a trolley that can be moved around. "We have a meeting in the morning, decide with the team where to put people and how long for.

"It is interesting," he says. "It is nice to get involved with the people at a personal level, but to look at the processes to make them more efficient."



The components/PCB factory is the site that entered the awards in 2006. Here they do PCB manufacture – SMT and through hole – and sheet metal fabrication. Part of the role of team leader Kathleen Davison is to "liaise with other team leaders about labour". While Michael Davison, shift team leader in sheet metal fabrication, concludes: "Maintenance is done by suppliers. PMs from the manuals of the machines are done by setter operators."



Location:
Southend-on-Sea

Employees:
217

Products:
Medical and industrial visual inspection equipment and ancillaries

Turnover:
£21m

Highlights:
Improvements in quality and cost; move to cells; new environmentally friendly building

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COORS ALTON BREWERY

Performance cheers customers



At Coors Alton Brewery, an introduction to HS&E is undertaken in the gatehouse, with visitors clicking through a presentation and answering questions to check their understanding before entering the site. General manager Robert Kent sets the tone when he says: “Our whole performance is based on people.”

The site brews such well-known brands as Grolsch, Carling and Worthington, and entered BFA previously in 2003.

product goes to the pub. The site supplies by ‘replenishment on demand’ to the depot network and also in bulk to regional brewers.

The supply chain performance of this site is excellent: 99.2% of suppliers deliver on time. Delivery performance ex-stock, production schedule adherence and stock record accuracy are all running at 100%.

Building on this performance, the business is looking at innovative new ways of supplying the market – talking, and listening, to

customers. The company surveys its customers and satisfaction beats best-in-class benchmarks.

In brewing, Rory Andrew is in charge of the shift, while Ross Stewart has technical responsibility. Andrew says that there is “lots of scope for change” here. For example, clean in process (CIP) of a fermentation vessel can take one hour. A procedure exists and, Stewart adds, “we do quite a lot of work to optimise CIPs”.

A new SCADA system is in place, which “can be seen from anywhere in the brewery”, states Andrew.

Simon Turner, an electrician on shift, has a work order list he has to complete in the scheduled week – the asset care focus includes measures of works order completion. Turner “has a discussion with the technician” to agree when these should be undertaken.

Colin Leach is one such technician, who says he “needs to understand the process; needs to know if something looks wrong”.

Every technician has an ‘ME’ (maximising excellence) folder containing a full checklist on training and skills, signed off annually. “Getting someone through this is like going through an apprenticeship,” says engineering manager Sean Kennedy, adding: “by putting in the practices, we sustain the performance”.



Quality testing on line is, according to technical manager Mark Dobner, “unique, where that level of technology is out there, with the guys [technicians] using it”. SOPs are used: “written, owned and controlled by the teams”, he continues. The quality of the product has won the site awards in the MolsonCoors group.

The process up to the cellar tank is batch driven. In fact, the site is a key location, with the cellar tank being “the biggest in the group”, says production manager Tom Smyth. And Robert Kent adds: “We hold a strategic stock of Grolsch here.”

Once kegged, the warehouse holds a maximum of 2.5 days’ worth of stock. Depots have a maximum 1.5 to 2 days of stock before

Location:
Alton

Employees:
91

Products:
Kegged beer for multiple depots
and bulk to trade

Turnover:
£117m

Highlights:
Supply chain performance;
quality; training and skills

WITH EXCEPTIONAL SUPPORT FOR ITS PEOPLE AND THEIR FAMILIES, WHILE REWARDING PERSONAL PERFORMANCE AND BUSINESS PROFIT, THIS IS ONE COMPANY THAT IS STORMING TO SUCCESS

HIGHLY
COMMENDED
PEOPLE MANAGEMENT

STORM INTERFACE

Benefits border on brilliant

Peter Ward, CEO of Storm Interface, told the judges: "We'd love to win, but are looking for feedback and expertise, and for you to comment critically. So we can't lose."

Storm Interface is a privately-owned company, formed in 1986, but it only started manufacturing products in 2000. It makes 'data entry' solutions for industrial and public use – keypads and keyboards for ATMs and internet booths, for example.

Before it had a manufacturing site, high-volume OEMs wanted to come and look. "They aren't comfortable with small companies sub-contracting" says Ward. So Storm Interface had to get into manufacturing.

At the Maldon site, there are just 24 employees. Exports, particularly to the USA, are very important. "70% is exported, with 140% growth over the last three years."

And, to achieve such growth, the 'multi-skilled' workforce is crucial. There is a performance focus and a reward scheme to

accompany that. Turnover is low and temps are used to flex the volume.

Suzanne Muggleton has responsibilities that include "innovative types of benefits for staff", which is how she describes the reward scheme. The result is "low turnover and good morale". It includes profit sharing and a flexible benefit, not paid as cash, but offered as something "just for them; a fun type of benefit". Rewards are based on profit of the business and personal performance, rated through an appraisal. Attendance bonuses are paid, with quarterly 'random' draws and also an annual payment for those not taking any sick days. Healthcare and life assurance are offered, and holidays can be flexed. The company runs regular social events and contributes to various charities.

The site carries out "electro mechanical assembly", says Ward, including cellular manufacturing, testing in each cell, laser marking and automated optical inspection. Laser marking is used so that a base keypad can be marked with differing symbols or languages, and removes assembly issues (putting the wrong key in the wrong hole, or upside down). Optical inspection then takes place and quality management is performed through first-off and last-off checks, with all data uploaded through the company intranet.

Manufacturing manager John Fawley says the layout is not at all fixed. "In fact, the only thing that doesn't change is that we keep changing it."

Linda Wakefield is a cell controller, a role that includes training, "making sure that they know how and what to build", she says. She has worked here for five years. "It is a really fair company and you respect that."

Team leader Deanna Pitt worked for the company prior to it becoming part of Storm Interface. After recent changes, she says, "it is cleaner, more efficient. You do get variation. You're not just sitting down doing something day in, day out."



Location:
Maldon

Employees:
24

Products:
Data entry products for public environments

Turnover:
£6m

Highlights:
Benefits scheme; flexibility of people; interchangeable layout

**HIGHLY
COMMENDED**
THE JUDGES' SPECIAL
AWARD

RAPID PRODUCT CUSTOMISATION, WHILE WORKING IN DEMANDING SUPPLY CHAINS, IS A MAJOR DRIVING FORCE BEHIND THIS COMPANY. AND THERE'S STRONG CHANGE MANAGEMENT, WITH USE OF KAIZEN TEAMS

RENCOL TOLERANCE RINGS

Fast development rings true



Rencol Tolerance Rings' technical director Andy Slayne sums up the business very accurately when he says: "We are always growing; there are lots of challenges."

The business manufactures tolerance rings – to the layman, these are radial spring fasteners, but the products are developed quickly, are bespoke and the company is commended for this rapid customisation.

"We design the fastener to suit the performance requirements of the application," adds Slayne.

Process and product development manager Marcus Baker says the product is "very hard to copy, very hard to design from scratch. On some of these parts, 2½ microns' change in the indentation affects the performance".

Each tolerance ring application, he explains, is, in effect, a "three-component system and the tolerance ring is one part – so it is important to keep 'with' our customers to understand the other two parts of the system".

The benefits of tolerance rings are "cost

energy into developing our people," he points out. The company also operates a bonus scheme for all, based on profit, and, as operations manager Brian Clease points out, "we are trying to be an employer of choice – offering people things that they really value. No-one clocks in or out; we have a very open and trusting culture".

There are two raw materials: stainless, and annealed carbon, steel. Supply is about "quality of service, not price," says Geoff Prynne, purchasing and logistics manager.

Craig Brice is a production technician. "Every Thursday, we have a kaizen meeting, and discuss all ideas. It is a really good company," he says.

Gino Bancalari, quality manager, demonstrates the "automated SPC", which allows him to send the data to his customers.

James Burges, who has worked in maintenance for six years, enjoys fault finding, while Marcus Baker, employed in the automotive area, says: "it is an older process, but we've done a lot of work on the operating system – improved speed from 1,000 parts/hour to nearly 4000 parts/hour".

Also, a new machine has been purchased and various process improvements have been introduced, including hydraulic punching to raise performance to around 6,000 parts/hour.

Simon Baker is the production team leader in the automotive area and gives an example of how flexible it can be, working in the factory: "I pick my children up in

the week, so come in on a Friday." (the site doesn't normally run on Fridays).

For quality purposes, a vision system is now in place – a top and side camera that rejects automatically. It can operate at up to 11,000 rings per hour and has been "a great success", adds Brian Clease.



saving, easier rework, performance. It is competing with alternative fixing methods".

The Bristol site is the global HQ, responsible for design and manufacture: "the hub of the organisation", says Andy Slayne. Nor is it just about products. "We put a lot of

Location:
Bristol

Employees:
80

Products:
Tolerance rings

Turnover:
£6.6m

Highlights:
Rapid customisation; development with customers; vision system for quality

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Winners: Chas A Blatchford; PDD
Shortlisted: Thermoteknix, Crowcon
Detection Instruments

Design Collaboration Award

Winner: Cambridge Design Partnership
Shortlisted: Altro, PDD
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Design Cycle Time Reduction Award

Winner: Altro
Highly commended:
Crowcon Detection Instruments
Shortlisted: Chas A Blatchford

Consumer Product Innovation Award

Winner: PDD
Highly commended:
Industrial Design Consultancy
Shortlisted:
Cambridge Design Partnership

Innovative Small Company Award

Winner: Thermoteknix
Shortlisted: Chas A Blatchford,
Cambridge Design Partnership,
Industrial Design Consultancy, PDD
Sponsored by ELC

BFA 2007

Factory of the Year

Winner: Reckitt Benckiser
Healthcare (UK)
Sponsored by Works Management

Best Process Plant

Winner: Reckitt Benckiser
Healthcare (UK)
Shortlisted: Coors Alton Brewery

Best Engineering Plant

Winner: Ultraframe (UK)
Highly Commended:
APPH Runcorn Landing Gears
Shortlisted: Rencol Tolerance Rings

Best Electronics and Electrical Plant

Winner: Selex Sensors and
Airborne Systems
Highly Commended: Exception PCB
Shortlisted: KeyMed (Medical & Industrial
Equipment), Storm Interface
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BEST FACTORY AWARDS



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Best Household and General Products Plant

Winner: Coca-Cola Enterprises
Highly Commended: Sharp Interpack
Shortlisted: Rocket Medical
Sponsored by Wincanton

Best Small Company

Winner: Exception PCB
Shortlisted: Rocket Medical,
Storm Interface

Most Improved Plant

Winner: Rocket Medical
Highly Commended: Coca-Cola Enterprises
Highly Commended: KeyMed (Medical & Industrial Equipment)
Shortlisted: Coors Alton Brewery, Reckitt Benckiser Healthcare (UK), Selex Sensors and Airborne Systems
Sponsored by TBM Consulting Group

People Management

Winner: Reckitt Benckiser Healthcare (UK)
Highly Commended: Storm Interface
Shortlisted: APPH Runcorn Landing Gears, Rocket Medical, Selex Sensors and Airborne Systems, Ultraframe (UK)
Sponsored by Productivity Europe

Supply Chain

Winner: Selex Sensors and Airborne Systems
Highly Commended: Coors Alton Brewery
Shortlisted: APPH Runcorn Landing Gears, Ultraframe (UK)
Sponsored by Toyota Industrial Equipment

Innovation

Winner: Rocket Medical
Shortlisted: Exception PCB, Rencol Tolerance Rings, Selex Sensors and Airborne Systems, Storm Interface

Health, Safety and Environment

Winner: Sharp Interpack
Shortlisted: APPH Runcorn Landing Gears, Coca-Cola Enterprises, Reckitt Benckiser Healthcare (UK)
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The Judges' Special Award

Winner: Exception PCB
Highly Commended: Rencol Tolerance Rings
Shortlisted: Rocket Medical, Sharp Interpack, Ultraframe (UK)
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