



Oakley's lean machine

Oakley's manufacturing facility in the Republic of Ireland is built around lean manufacturing principles. **Alex Thomas** was given a tour of a highly efficient production process

Descriptions on the Oakley website of 'reinforced blast walls' and 'product torture chambers' at its Californian headquarters encourage the idea that its production facilities are Willy Wonka-esque, magical factories.

However, a visit to the brand's plant in Mullingar reveals not the chaotic laboratory of 'mad science' alluded to by the marketing material, but instead a set-up geared towards maximising efficiency and value for the customer.

It is structured around the lean manufacturing principles of the famous Toyota production system, where the use of resources for anything other than the creation of value for the end customer are considered wasteful and therefore eliminated.

Employing 70 members of staff, the lab provided 70,000 prescription (Rx) sunglass lenses last year to Europe, North Africa and the Middle East, while it also dispatches plano customised frames through the Oakley customised programme.

Explaining the reasoning behind



John Russell: the implementation of the lean manufacturing philosophy into the lab, John Russell, managing director of Oakley Ireland Optical, says: 'All the lenses we make are made from polycarbonate, which we term Plutonite, our trade name for it. We use this because of the very high impact resistance it possesses as a lot of our models are sports frames, but it's very tricky to work with and scratches easily. The prescriptions we make are also very complicated, 80 per cent are 8-base, while 40 to 50 per cent have backside anti-reflective coating'. Russell divulges that the difficulties behind making complicated prescriptions in polycarbonate led to the need to minimise returns, breakage and waste.

flexibility of his staff is his 'greatest resource'

'The customer's not willing to pay for these things and everything the customer's not willing to pay for, we reduce,' he says. 'Waiting times, the customer's not willing to pay for that, bad quality, the customer's not willing to pay for that, walking times, cooling times. We started doing that [implementing lean manufacturing] about four years ago and our scrap rate has been reduced by about 60-70 per cent,' he reveals.

Russell cites the flexibility of the facility's staff, his 'greatest resource', as being crucial to the implementation of lean principles into the laboratory. He states that approximately three

quarters of his staff can perform all the different manufacturing functions, allowing him to move them around the factory floor whenever an opportunity to increase efficiency is identified. As part of the training, as well as operation of machines, each worker is also taught how to perform maintenance on them such as calibration and cleaning. According to Russell, this allows workers to feel empowered: 'It's their machine that they're responsible for and so you get fewer breakdowns, which again are something the customer is not willing to pay for.'

Staff training

To enable the cross-training and 'up-skilling' of workers, Oakley's has developed an internal training and certification system. 'Before you're left on your own you have to do six weeks training and you have to be signed off at every step,' explains Russell. 'A certification could be assembly of rimless, running a glazing machine is another one, so is surfacing, which involves blocking, generating, filing, polishing and coating, each one of them is a certification,' he says.

Each stage of the lens production process such as order-entry, surfacing and coating has its own dedicated team and every three to six weeks each team sits down and conducts a 'kaizen', a Japanese term meaning improvement or change for the better. Kaizens aim to eliminate waste by improving processes and results. Another role of the teams is to control quality throughout the process through in-line checks, which Russell says means the final product should be perfect. 'Final control and inspection is a waste, the customers not wanting to pay for that. Now 90 per cent of the scrap is worked out from start to finish,' he reveals.

Although the implementation of lean manufacturing has involved significant financial investment, Russell believes it has paid for itself many times over. Since lean manufacturing principles were put into practice at the plant from 2006, the return rate has fallen to 0.2 per cent, much lower than the 10-15 per cent rate when the laboratory started manufacturing in 2002. Russell says that in 2002 internal breakage would have been around 20 per cent,



Plutonite, Oakley's name for polycarbonate



'whereas we're now between 5-10 per cent'.

The change has also had an impact on the physical appearance of the laboratory which appears clear and uncluttered by conveyor belts, something which Russell believes hinders flexibility. Indeed all the machines are on wheels and can be moved anywhere within the facility if necessary, while the building's vertical space has been optimised by the use of giant rotating carousels to store inventory.

While quality, breakage and scrap have been the focus of Oakley's lean revolution, order fulfilment is the next issue to come under scrutiny. 'We are currently shipping 90 per cent of orders within one day and 99 per cent within two days and have next-day shipping to 95 per cent of the UK. We're working at the moment to ship everything within 24 hours, so as soon as the order is placed here it leaves within 24 hours. The customer wants the products fast, even though for this type of product they're used to waiting seven days or two weeks,' says Russell. 'By increasing that turnaround time, that will increase the value for the customer and the optician,' he adds.

Customer service has also been recently addressed with all telephone calls to Oakley now answered by the lab since September 1. 'We have developed an Rx centre of excellence, where issues or questions from accounts are dealt with straight away by a trained customer service agent who understands both Rx and the Oakley offering,' said Russell. The addition of a freeform offering in

The facility's vertical space has been optimised



January is another new development on the way.

In attempting to eliminate or minimise any action or process that a customer would be unwilling to pay for, Russell is attempting to work from the perspective of a customer. To this effect, he feels that his background in manufacturing rather than optics, having previously worked for Intel, is a significant advantage. Differentiating his lab's lean manufacturing process and those of others, he says: 'Traditionally in labs it's simply about getting the job out and there's a tremendous amount of waste. Lean is a business strategy based on satisfying the customer by delivering quality products and services that are just what the customer needs when the customer needs them, at the right price, while

using the minimum materials, space labour and time.'

Despite significant growth in Rx sunwear in recent years and sales from the lab having increased 25 per cent last year, which in turn was up 25 per cent on the year before, Russell sees his laboratory producing even more lenses in the coming years. 'People are only becoming aware of prescription sun lenses – their current idea of prescription sunglasses is the buy-one-get-one-free offers.' Revealing a future marketing drive, he says: 'We are looking to educate the consumer. Most consumers wouldn't know that they can get the product as an Rx. We'll see more and more emphasis on Rx, it's a big growth area for opticians and over the next couple of years you'll see a lot of advertising to the consumer about Rx sunwear and sports frames.'

Oakley's customisable frame options such as choosing colours, or adding company or team logos have also helped increase sales. Russell reveals they have produced sunglasses for corporate clients including Audi and Pokerstars UK.

The Oakley website, which allows practitioners to go through the customisable options with customers, also has other advantages, according to Russell. 'It helps your cash flow as you're not tying up your resources in stock. There doesn't need to be a minimum order of 100 pieces, you have five or six pieces in a display unit so that people can try the frames on and see what it feels like. Then the optician shows them on the computer the colour options, lens engraving options and so on and then it's delivered to the practice within a few days.' ●

New regulation in Ireland

Martin O'Brien reports on the legislative changes affecting the optical profession in Ireland

In Ireland the profession of optometry was first properly addressed by the government with the Opticians Act 1956, which created the Opticians Board to maintain the register of those entitled to practise as an optometrist, and to make the Rules under which the profession operates. Predating the equivalent act in the UK by a year,

the Opticians Act set up provision for separate registers for ophthalmic opticians and dispensing opticians and set out rules on the sale/dispensing of spectacles and strict definitions of what constitutes the same.

The battle to have the profession properly regulated and recognised was long and difficult, with active opposition from a powerful ophthalmology lobby in the medical community. While the establishment of the Act was an important milestone, there were some problems with the legislation that has affected how the profession has developed in Ireland.

As a result of the legislation, for many years optometrists were not allowed to 'use a drug for the purpose of paralysing the accommodation system'. This was a deliberate attempt to prevent optometrists from seeing children by preventing cycloplegic refraction. This is one of the reasons optometrists are not employed by the state either in hospital or community care clinics; with the provision of free eye care to children under the age of 12 in these clinics only, paediatric optometry in Ireland has been slow to develop. However, the most deleterious provision of the Opticians Act was section 48:



'1 A registered optician who is not a registered medical practitioner shall not suggest by any written or oral statement or by any action that the registered optician has made or is capable of making a medical diagnosis of a disease of the eye or that, in relation to the treatment of the eyes, the registered optician has done or is capable of doing anything other than in the case of a registered optometrist, the prescribing or provision of spectacles, or in the case of a registered dispensing optician, the provision of spectacles.'

As a result of this provision, opponents of the profession have continued to assert that optometrists cannot diagnose or recognise ocular pathology. This rather disingenuous and rigid interpretation of the legislation is one of the other reasons that there are no optometrists employed directly by the state. The majority of optometrists in Ireland are involved in provision of examination/dispensing services under the Medical Card/PRSI schemes run by the Department of Health and the Department of Social Protection respectively holding a contract with the relevant department to do so.

The Opticians Board which administers the register for dispensing opticians and optometrists is made up of 11 members, four of whom are required by legislation to be medical practitioners, at least one pharmacist [sic] and one dispensing optician.

A minor revision of the Act and Rules, in 2003 led to the infamous section 48 being amended to include the following:

'4 Where in the course of an eye examination, a registered optician referred to in subsection (1) suspects the presence of a disease or condition of the eye, the registered optician shall inform the patient of this and recommend that the patient consult with a registered medical practitioner.'

The amendment also removed the prohibition on using cycloplegic drugs, took ready readers of power less than +4D out of the definition of spectacles, introduced the term optometrist and confirmed that all contact lenses including plano lenses required professional supervision for sale and made provision for new Rules regarding contact lens prescriptions including the requirement of an annual examination for the renewal of the Rx.

These changes were in general positive and well received by the profession, but they did not address



Legal constraints on the use of cycloplegics made examination of the young a problem for Irish optometrists

the major difficulty of section 48. Indeed it can be argued that there is now an inherent paradox in the legislation as Section 48 (1) states an optometrist may prescribe spectacles only; whereas Section 48 (4) requires an optometrist to recognise relevant pathology and refer accordingly. This ridiculous situation is still in place due to lobbying from a certain section of the medical profession. Also the discrepancy of having a requirement of medical practitioners, usually ophthalmologists on the Board was not addressed.

In a surprise move during the budget of November 2008 it was announced that as part of a move to rationalise the number of quangos, the Opticians Board was to be abolished and the profession to become regulated under umbrella legislation, the Health and Social Care Professionals Act (HSCPA) which had been drafted to provide regulation and registration for a raft of currently unregulated professions (Table 1). The HSCPA legislation states clearly that professions may be brought under this umbrella if '(A) the fitness of the members to practise their profession is not regulated by or under

TABLE 1

Professions designated by HSCPA

- Clinical biochemist
- Dietitian
- Medical scientist
- Occupational therapist
- Orthoptist
- Physiotherapist
- Podiatrist
- Psychologist
- Radiographer
- Social care worker
- Social worker
- Speech and language therapist

another Act of the Oireachtas (Irish Government), (B) the Minister has given interested persons, organisations opportunity to make representations...'

A quick glance at this seems to show that optometry and dispensing optics does not fit the criteria. However, the move seems to be government policy, no matter how misguided. Consultation with various civil servants has revealed that the announcement took all parties by surprise and has shown a breathtaking lack of understanding of the differences between the professions of optometry and dispensing on the side of people dealing with the proposed move. As of this moment the civil servants do not know if there should or will be a different board for each profession. There are approximately 900 registered optometrists and 160 registered dispensing opticians; and approximately 50 orthoptists who will definitely have their own board under the new format.

Under the proposal, each designated profession will have a registration board and will send a representative forward to an overall HSCP Council, with a lay person appointed by the minister per profession plus a chairperson. Each profession's board will be entitled to set the Rules for that profession, subject to approval of the overall council.

There exists an opportunity for the professions to rewrite the Rules we operate under and remove the paradox of Section 48 and free the profession from artificial shackles that prevent optometrists from properly applying their skills, experience and training to benefit the public.

A contrarian view is that abolition of the Opticians Act is a retrograde step for the profession and a slap in the face, as this move has not been considered for dentists or pharmacists and is one more in a long line of insidious insults to optometrists and dispensing opticians. Furthermore inclusion in such an umbrella body will leave optics mired in an endless treadmill, leaving optics no better off and with extra layers of bureaucracy to deal with.

Time will tell which view is correct, but it is without doubt that this is the most important and significant event since the introduction of the 1956 Act itself. ●

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