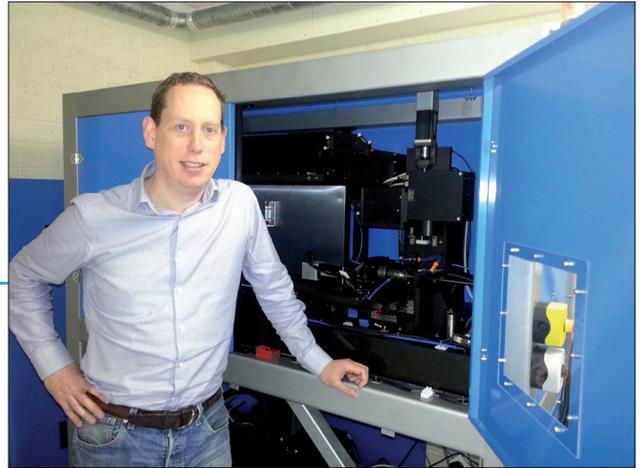


The laser safety business

Interview with *David Gillen*
Managing Director of *Blueacre Technology Ltd*



How do your business activities divide between the delivery of turnkey laser systems and your subcontract R&D work; and how have your activities and resources in these two aspects of your business evolved with time?

The company currently has a 60:40 split between laser systems and subcontract work, which has grown from 100% subcontract work 4 years ago. Our customer base is approximately 90% medical device or life science orientated. This was not planned but as the company grew, we noticed that there was a gap in that market, particularly in Ireland and the UK. The machine sales has grown into the life science sector, although we build for other markets as well.

It seems that most UK companies providing laser systems typically have to export over 80% of their product because their home market is so weak. How does this compare to your experience?

We have always been an export orientated company, which I don't think is a reflection on the Irish market. In fact I would say that the Irish market for laser related products is disproportionately large when compared to the overall economy. The large medical device base utilizes a significant portion of laser technology, which is brought in from all around the globe.

The medical sector is well established in Ireland and stent cutting seems to be of significant interest to Blueacre. What challenges have you faced in breaking into the medical equipment and component sector?

The stent market, although lucrative for medical device manufacturers is not a particularly large market for equipment suppliers. If you do the math, the total number of system required to machine all the stents produced globally is surprisingly small. However the ability to process tubes, other than stents, is key to the production of a wide range of medical devices.

The main challenges in breaking into the medical sector are as much about brand awareness as about capability. Ireland being a small country makes networking much more important, but opening the door only presents the next level issues, such as quality, ability to deliver, financial stability. For a small company to get an order from a large multinational requires a senior engineer to put their neck on the line. The saying 'no one ever got fired for buying IBM' is applicable in every market and I think it is sometimes simpler for local companies to look overseas when sourcing suppliers. To get buy in from the Irish based multinationals requires you to be technically better than the competition, which can only be obtained by investing significantly in R&D. Therefore Blueacre Technology has spent a lot of money and effort on the ancillary side of laser equipment manufacturing, such as vision system integration and seemingly simple things like ensuring our machines are compatible with databases. This has paid off in the long term but such a level of development is hard for a SME to sustain.

Is being based in Ireland an advantage to your business at the present time?

The market we work in is always going to be global, and being based in Ireland will not give us any benefits over a company in another part of Europe. That said, if Britain decides to leave the EU it may work more in our favour, given the knock-on effects it would have for Britain's competitiveness.

Have you considered setting up a subsidiary elsewhere in the world, for example in China or the USA?

Not to date. We have managed to sell into Asia and USA without any need for a dedicated subsidiary. However, we have had discussion with distributors in Asia, and will most likely set up an agreement in that region.

How local is your customer base for your subcontract R&D work?

The subcontract work is again 90% export, going mainly to the UK and the USA. Interestingly, the biggest local market is probably for marking, which is becoming a requirement for traceability of tooling in many sectors.

Are you surprised that there aren't more laser micro-machining job shops in the Ireland and the UK?

Two things are always going to be a barrier to entry for laser micro-machining. Firstly micro-machining is still a bit of a 'craft' and experience in a range of disciplines is necessary to get good results. Secondly, the cost of entry is high with motion control, optics and laser systems all to be purchased before you can get into business. With this in mind it is not surprising that there are so few companies providing laser micro-machining services.

How do you see the future for micro-processing laser job shops in Ireland?

I think the answer to the question is is the same for micro-processing job shops everywhere. Companies are always going to need laser processing, whether it be macro or micro. For micro machining it is more an issue that the supplier has the correct technical experience as well as the suitable laser i.e. picosecond or Excimer, rather than being geographically close. Therefore if you have the right equipment, then I think the future for laser micro machining is bright wherever you are based.

How easy is it for you to find people with the right education and skills for your business? Do you have strong links with universities?

Finding staff is always hard, particularly as there is no specific laser based courses for under-graduates. Therefore

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the best you can hope for is a well-educated graduate that can learn on the job.

Do you think that the case for using lasers in manufacturing (i.e. technology transfer in laser materials processing) is still to be made in Ireland?

There are a host of areas, especially in the more traditional Irish industries of Food and Beverage, where laser processing has yet to make any significant in-road. A lot is down to lack of education on the varied uses of laser and the cost benefits that can accrue. This will not change overnight but I can see the use of lasers increasing, especially as their cost comes down.

How has the present downturn in the world economy affected Blueacre? Are you seeing signs of an upturn?

Luckily we have had the strongest three years of growth since the downturn commenced. This is in part down to the nature of the sector, with medi-

cal devices always being a steady market and also due to the limited number of companies who can do the work.

Where do you envisage Blueacre will be, in terms of its size and capabilities, in 5 years time?

The plan is to grow both sides of the business. On the contract side we continue to see polymer processing of medical devices as a growing market. Therefore investing in polymer capable lasers is a key priority at the moment. On the machine building side we have tended to be a manufacturer of bespoke systems, customised for particular customer requirements. In parallel to this work we have been developing our own machines, with a tube cutter being the first Blueacre Technology 'product'. The plan is to continue with this and roll out a new product every 12 months.

David Gillen

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Laser Materials Processing in the Medical Technology Sector

In December last year the Health Technology and Medicines KTN undertook what is referred to as a "deep dive" roadmapping exercise on High Value Manufacturing (HVM) in The Medical Technology Sector. The exercise highlighted lots of priority topics that require innovation and R&D in many areas (e.g. physics and materials) but, considering the emphasis on HVM, the initial report did not have as much content on R&D in manufacturing as I was expecting.

As expected, the one manufacturing process that came through strongly was Additive Manufacture (AM): It is still developing but already offers innovative solutions for product development and rapid manufacture. However, it is not the only process with great potential in the medical technology sector. High volume nano-scale manufacturing and manufacturing technologies for surface functionalisation were surprisingly not selected for further investigation; indeed, the key technologies of much medical sector manufacturing are concentrated in milli and micro manufacturing: scales at which LMP already dominates. One thinks for example of the laser-based manufacture of stents, micro welding of metals and polymers, precision drilling of cannulae and needles, marking and engraving of identification codes; surface functionalisation to aid implant integration, reduce healing times and control stem cell differentiation.

When it comes to laser technology the UK is particularly strong in micro-machining and related processes, with several world leading laser manufacturers and system builders, developing and exporting 80%+ of their product, and with significant R&D being undertaken in both universities and RTO's.

It is therefore of some concern that the current emphasis of the HVM Catapult leans towards macro-scale applications, particularly in the aerospace, automotive and nuclear sectors. As a HVM tool, the laser should be a key enabler for driving the manufacturing requirements in the medical technology sector, and this should be provided for in the ongoing development of Catapults; one can only hope that that the Technology Strategy Board will not lose sight of this.

I discussed the initial draft report of the meeting with Sue Dunkerton, Co-Director of the Health KTN, and we agreed that the exercise needed to give more attention to manufacturing, and a majority of the feedback I provided has been incorporated into the current report, a version of which is available for further comment. It can be found by going to the Health Technology and Medicines KTN section of the TSB '_Connect' web portal.

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PRESIDENT'S MESSAGE

ILAS2013 has come and gone and a great success it was too. A very great number of people gave their time to make it work so well. My thanks, and I am sure the thanks of every AILU member, go to all those who organised, planned, operated, spoke or attended the event.



The feedback from delegates was discussed recently in a wash-up session with the members of the ILAS2013 organising and technical programme committees, which effectively became a first planning meeting for ILAS2015. It seems we got lots of things right but there is scope for making the next ILAS even better than the last. In particular, we will work to increase the number of industrial application presentations in the programme and we will choose a venue that can offer better facilities for exhibitors and a larger exhibition area so that the refreshments and lunch can be served within it, in order to encourage delegates to spend more time looking at the stands.

Meanwhile, post ILAS, the work of AILU continues. One of Martin Sharp's projects as President was to make AILU more visible to those using lasers in manufacturing and this will continue.

We do have good visibility among academics; our representatives from laser suppliers do a sterling job; there is a strong base of laser job shops that strongly support us. But we do very badly with the industrial user sector. In particular, there are many companies out there who use lasers every day who either do not know of the Association or who find us irrelevant.

From my many years of experience in the engineering subcontract sector I know that improving this situation will not be easy; however, we must strive to be relevant to industrial users of lasers if we are to be true to the objectives of AILU. (These are set out on the back of the magazine front cover.) I see this as essential to the future well being of the Association and it is something that I will make a priority during my two years as AILU President.

Neil Main

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