



APMG TERM PAPER FEBRUARY 2013

# RESHORING: BRINGING MAKING BACK?

## INTRODUCTION FROM THE APMG

### **The emerging phenomenon of reshoring: an important industry trend, or a red herring?**

Over the last year, reshoring has tentatively reappeared on the industrial policy radar. And looking further back, in 2009 the EEF showed that around one in seven companies with production in a low labour cost economy had returned some of that activity to the UK in the previous two years.<sup>1</sup> But most would admit that it has felt rather like catching the tail-end of a rumour – lots of discussion about what people think is going on, what they have heard is taking place, but little evidence.

There are challenges around proving:

- if there have been any particular trends in reshoring;
- why it is taking place (if at all);
- in which sectors is it happening;
- and how Government could potentially encourage the activity.

As if to compound this issue, it is very difficult to encourage some manufacturing businesses to speak openly about their business decisions – why they choose to position their activities here or elsewhere; this is not a matter for public or Government discussion. However, if we are to agree that *more* manufacturing activity happening on these shores is a good thing (whether that be design, research and development, servitisation, or assembly) then we need to understand what conditions are most important in influencing business decisions, and analyse if those conditions can be encouraged by policy.

In producing this paper, we have invited manufacturers to tell us about experiences of reshoring, why it happened, what was particular to their experience, and what Government can do to encourage the practice.

Whilst we focus here on the UK context, this trend has been reported particularly in the United States where companies such as Google, General Electric, Ford, Caterpillar and Apple have all partially returned production to their native countries.<sup>2</sup>

Conclusions we may draw from these examples are complex. Labour costs remain a significant driver, and it is probably only in Britain and America that labour is flexible enough to have a good chance of persuading companies to reshore production, according to *The Economist*.

However, as is shown in this paper, reshoring should not necessarily be framed as the “reshoring of jobs” but rather the “reshoring of processes”, some of which can now be automated, thus negating the impacts of labour costs. From all our examples, the ‘hidden’ costs of offshoring appear much more important than upfront savings.

Additionally, both *The Economist* and the EEF recognise the particularly British concern around localising and monitoring supply chains, which is raised by a number of contributors to this paper. Equally British, is the emphasis on brand value and the increasing customer demand for British-made (of course, this is more likely to gain traction in the manufacturing of consumer products than across industrial supply chains).

Looking to how Government can encourage these trends, it is yet to be proven how much supply chain finance initiatives are actually encouraging the development of new local supply chains, rather than strengthening existing ones. A greater investment in skills is a common theme, although the automation issue raises questions about the kinds of jobs that might be available across sectors.

Government does have a major role in shaping the IP landscape of the UK – shown to be a major factor in concerns about production at distance – and it is crucial to monitor the implementation of the Hargreaves Review recommendations in this field.

<sup>1</sup> <http://www.eef.org.uk/blog/post/Reshoring-is-it-real.aspx>

<sup>2</sup> *The Economist*, January 2013

## VIEW FROM THE SECTOR: 1

### Re-shoring Trends in Electronics Manufacturing

Marco Pisano, IntellectUK

Many technology companies that design electronic hardware (so-called original equipment manufacturers- OEMs) over the past decade often outsourced production to electronics manufacturing services (EMS) companies – businesses specialised in manufacturing and supply-chain logistics. However labour arbitrage dynamics are changing quickly and there is a growing trend for re-shoring as developing economies are expanding, shipping costs are increasing, and markets demand greater responsiveness from their supply-chain.

Over the past 10 to 15 years, western manufacturing has seen a significant out-flowing of production, particularly into China, as OEMs have taken advantage of very low labour rates to build new generations of products at more competitive prices. In response, UK manufacturers adopted a different business model targeting high-value, low-volume work. This was critical to many firms surviving the economic downturn. Whilst debates about the long-term implications for western manufacturing have continued, this business model has now become widely adopted and accepted.

However changes at home and abroad now provide strong reasons to challenge the perception that manufacturing in volume means having to move offshore. Wage costs in China have increased by 22%, on average, in the last year. More dramatic effects may result from the changes happening throughout Far-Eastern societies. China has recently introduced a minimum wage, for example, and other countries in the region such as India, Thailand and Vietnam are planning to follow suit.

Other costs are also increasing, such as shipping, which is heavily influenced by rising oil prices and fuel duties. The cost of fuel is likely to continue rising for the foreseeable future, driven by several factors such as environmental concerns as well as the increasing costs to locate and extract resources. The risks involved with manufacturing offshore also remain significant. Among these, the theft of IP can become a real and major threat. The Chinese government has implemented policies to prevent copying, but uncertainties remain whether these can be successfully enforced.

The world's markets for high-tech manufacturing are increasingly competitive and electronic assembly contracts are often awarded on the basis

of achieving the best overall result. The UK has proved to be competitive, where automation can be deployed at NPI (new product introduction) stages while also delivering advantages such as flexibility in terms of accommodating evolution in product design and changes in delivery schedules. As the relative cost of manufacturing offshore is gradually increasing, more and more companies are rethinking their strategies and successfully testing local supply-chains for competitiveness. Several UK OEMs known for their sourcing offshore, for example, have made commitments to design, develop and build in the UK.

Intellect's members operating in the UK electronics supply-chain have noticed a growing re-shoring trend from their customers that kept design local but off-shored manufacturing. IP protection for complex high-tech equipment (e.g. medical hardware) has become such a major threat that these companies are even prepared to pay more in order to keep production local. Close monitoring of quality standards, greater security for IP, and the convenience of close communications without language and time-zone barriers are seen as the main drivers for re-shoring these kinds of products.

The economics of high-tech manufacturing are changing continuously, and OEMs must keep abreast of the changes happening in offshore locations and closer to home, to remain competitive. As automation technologies also become increasingly affordable and customised - the economics of where manufacturing is located will be comparable across the planet. Hence aspects such as availability of skills and the overall business environment will be the true differentiators that will influence corporate decision-making. There are potentially vast economic opportunities for the UK to capitalise on these trends by creating a competitive environment in which companies can sustainably invest. Measures such as corporate tax reforms, capital allowances, patent box and R&D tax credits are all steps in the right direction - however much more needs to be done to ensure the UK becomes a truly attractive location for high tech manufacturing. Creating a stable and certain policy environment for (smart) transport and energy infrastructures or providing incentives for the aggressive adoption of automation technologies, for example, would encourage businesses to make the most of the re-shoring opportunity.

Find out more about IntellectUK by visiting their website: [www.intellectuk.org](http://www.intellectuk.org)

## VIEW FROM THE SECTOR: 2

### Quality in the UK and China

#### William Beckett, William Beckett Plastics

We have had bad experiences in dealing with mould making companies in China and decided to bring back all the work to the UK.

We endured dealing with more than one different mould maker, but with the same outcome in each case. *Yes* prices were very competitive, and *yes* they seem to have all the engineering skills, but in reality, they don't understand quality, reliability, technical issues, or delivery times.

Although we were lucky in having one suit of moulds produced on time and to a high standard, subsequent moulds proved to be dire in quality, over 3 months late on delivery, and incapable of maintaining the production outputs they were designed to achieve. After 2 years of wasting excessive management time, an excessive number of visits, and an excessive overdue deliveries, we called

it a day and have never placed an order with China since.

There are 5,000 mould makers in the Guangdong province alone, which is more than the whole of Europe put together. Companies like ours will receive approaches from different ones weekly and there is no way of being able to vet them unless you visit them personally and even then you can be hoodwinked.

Dealing with them cost us a lot of money including a contract worth over £100,000. It is now a pleasure to deal with local companies again who have a better understanding of the plastic moulding processes, our requirements, and the importance of delivering on time and to specification. From our point of view, having high quality engineering products made in China is a myth!

Find out more about William Beckett Plastics by visiting their website: [www.beckettplastics.com](http://www.beckettplastics.com)

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## VIEW FROM THE SECTOR: 3

### Bringing the Iconic Humbrol Tinlet back to England

#### Edward Krawitt, Rustins Limited

Everything matters – technical competence, product quality, service excellence and price. With this in mind we presented our case to manufacture the world famous Humbrol enamel paints in our north London factory. Hornby, the brand's owner, asked us to pitch for the contract when they decided to explore alternatives to their supplier based in China. We stressed our strengths and advantages including:

- The competence to match more than 150 colours with locally available pigments and 100% compliant raw materials;
- Short lead times and quick deliveries;
- Fast and constructive feedback for technical queries;
- A collaborative approach to new product development;
- Easy communication with no language, cultural or time zone issues;
- A price to ensure Rustins and Hornby both achieve sufficient margins to grow our companies.

After extensive diligence to ensure we met their quality standards Hornby made their decision, the basis for which Frank Martin, chief executive, explained to The Telegraph as "In the end they could give us the best combination of price, quality, and speed of service."

On receiving the go ahead in 2011 we started formulating all the colours and ordered a new filling line from a manufacturer in Yorkshire. By the second quarter of 2012 we ramped up to full production and in doing so saved or created at least 7 jobs directly and we hope more indirectly through our domestic procurement of raw materials, packaging and manufacturing equipment.



Humbrol Filling Line

The Humber Oil Company first made Humbrol enamel paint in 1935. A number of companies owned the brand before it became part of Airfix and Hornby bought it in 2006. Production moved from Hull to China about 2004 with cost as the main driver. Rustins, founded in London in 1928 operates from its Cricklewood factory. As an SME with 50 employees and £6 million sales, we are known in the coatings industry for our niche of wood finishes and specialty paints. We export about 20% of our Rustins branded products and more indirectly with Humbrol paint which is exported to more than 50 countries.

The relationship between Rustins and Hornby is strong with cooperation on many fronts such as

- Rustins distributing into the DIY channels for Hornby;

Find out more about Rustins by visiting their website: [www.rustins.co.uk](http://www.rustins.co.uk)

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## VIEW FROM THE SECTOR: 4

### Proximity to R&D

#### Ted Wiggans, Xaar Inkjet Printheads

Our situation doesn't fit into the classic definition of reshoring. I will explain why.

My company began life as an IP-heavy licensing-driven company in the early 1990's in Cambridge. In 1999 we acquired the manufacturing facility of one of our licensees, which is in Stockholm. This was then used to manufacture product for sale under the Xaar name, and was the only Xaar manufacturing facility.

In 2006 Xaar made the decision to construct a new facility in Huntingdon, which is close to the R&D centre in Cambridge. A new product platform was established in the Huntingdon facility, and new product variants have been subsequently introduced into the plant.

The investment into the Huntingdon facility now stands at c.£40m, with further investment of c.£10m planned for 2013.

The result of all of this is as follows:

- In 2006 the Stockholm plant produced 100% of the Xaar print head turnover.
- By 2012 the Huntingdon plant produced c.90% of Xaar print head turnover, the remaining 10% coming from the Swedish plant.

Over that period the turnover of the company has doubled, and we have grown at c.20% per year over the last three years.

Find out more about Xaar by visiting their website: [www.xaar.com](http://www.xaar.com)

- Developing new coatings and accessories to complement the enamel paint;
- Formulating new colours to the exacting standards of discerning modellers.

Industry support matters – help from the British Coatings Federation with compliance and keeping us apprised of industry developments ensures that our exports favourably compete with international and domestic players.

Communication matters – and is fast and easy at all levels from logistics to marketing to R&D to purchasing to manufacturing to the company leaders. With a manufacturing partner so close, Hornby can better optimise its stock levels and short lead times mean they rarely disappoint modellers looking for the obscure – and carefully formulated! – colour.

The reason for the siting of the plant in Huntingdon, rather than expanding Stockholm or building a plant in the Far East was as follows:

1. R&D is based in Cambridge, and there is a massive advantage from having production close to R&D in what is a relatively immature market. The UK is also an easier place for us to do business than Sweden.
2. A Far East plant would only have a positive impact on direct labour cost, which makes up a relatively small proportion of our product cost. Other costs – management, new product introduction, lead-time, logistics, etc.- all increase with a Far East site, and capital costs, materials costs, etc. are the same. The key is overall cost of ownership.
3. Protection of IP and know how is key to the prosperity of our business. Protection of IP and know how in a Far East plant is an order of magnitude more difficult than in a UK plant
4. “Made in the UK” is a marketing plus for our products, 85% of which are exported.

We are also actively encouraging the use of UK suppliers in our new designs, resulting in much shorter supply chains than the older designs. This can be a challenge as a lot of the supply chain was hollowed out in the early 2000's, when companies became obsessed with the headline costs and forgot about the hidden costs. However, we are making progress with this.

## VIEW FROM THE SECTOR: 5

### Experiences of Chinese Outsourcing in IT manufacturing

David J Thompson, Tranquil PC

Tranquil PC Ltd (formed 2003) is a family owned IT business based in Manchester. The origins of Tranquil PC, like so many other UK companies is R&D and innovation. Our PC systems are specifically designed to be fan-less and extremely reliable – and as such provide long term service and low operating costs. Our systems are used in numerous markets, including telecoms, broadcast, IT security, Digital Signage, medical and general office use.

Initially all chassis / peripherals were made locally, in the UK. Within 24 months the attraction of China's lower costs, and 'single point' sourcing convinced us to outsource the manufacture of our chassis and other components to China. Being in IT demanded lowest possible cost of manufacture, with all other companies 'building in China'.

At first, the relationship with Chinese vendors was favourable. As time progressed, however, a number of issues surfaced:

1. Increase in Minimum Order Quantity (MOQ) demands;
2. Hardening of payment terms;
3. Increasingly longer lead times to delivery;
4. Decrease in quality (as vendors increasingly used outsourcing);
5. Appearance of 'our' products in the market (copies);
6. Increasingly aggressive sales techniques.

A more subtle issue was the 'loss of control' that moving overseas rose. Gradually we began to lose connection with our long term customers, and lose the ability to innovate new solutions. Our previously strong 'customer focus' and fast response to customer demands started to deteriorate.

For companies selling slow evolving 'consumer' goods, having a low cost supply chain may be important. But for companies involved in innovation, as Tranquil PC is, working with China began to tie our hands.

Increasingly higher MOQ levels and lead times resulted in negative elements and attitudes, including:

1. Cash being tied up in warehoused items;
2. Cash being tied up in 'pre-payments' and 'goods on the water';
3. Pressure to sell the goods warehoused;
4. Reduction in innovation and opportunities to deliver what our customers needed;
5. Increasing lead times and reduction in the ability to collaborate with customers.

As a result of the above increasing constraints, Tranquil PC took a decision in the summer of 2011 to go back to its roots of product innovation and customer focussed relationships – important values that were diminishing as we 'lost control'.

Part of this 'return to UK' strategy involved the creation of new employment and research into optimised product design, as well as manufacturing technologies. Additionally new capital equipment had to be procured.

In addition to equipment, staffing and training demands, Tranquil PC also discovered that locating supporting companies was not easy. The decline of UK manufacturing and engineering has resulted in fewer support services.

Tranquil PC have certainly benefitted from the changes implemented early in 2012:

1. New customers and products have been accommodated;
2. Concepts can be designed and sampled within days not weeks;
3. Products can be manufactured and finished within weeks, not months;
4. Profits have increased;
5. Stock holding of chassis decreased;
6. Cash released from stock;
7. Staff morale and 'worth' has improved;
8. New staff vacancies have and will continue to become opened;
9. Technology and innovation is now kept within UK, with increased security;
10. Engineering and manufacturing skills are being adopted and valued by staff.

In addition to the procurement of the first high precision CNC mill in October 2011, a second machine was commissioned in July 2012. A third machine is planned to be installed in March 2013. The medium term plan is to accommodate eight to ten high speed CNC mills by the end of 2015, increasing profitability and employment.



The team at Tranquil PC

Tranquil PC Ltd is now recovering from the damaging influences suffered by procuring from China. The medium and long term benefits of 'bringing back manufacturing' to the UK are substantial, both to the manufacturing companies, their customers, employment opportunities, skill creation, innovation and tax generation. But there is a cost to effect this change, and financially supporting this should not be under-estimated. Change is not always easy and more often than not difficult to embrace – but it's necessary.

Over the last century the UK was regarded as a world leader in innovation, and the workshop of the world. This status has been in severe decline. However, our population, in the main, still have the character, energy and enthusiasm to innovate and create. We need to give them the opportunity and environment to grow, and the nurturing and support to succeed.



## A FINAL WORD FROM THE APMG

**In discussing ‘reshoring’ during a breakfast session in the House of Lords, the APMG pondered on much of what is included in this paper: the crucial issue of labour arbitrage, yes, but more crucial still, the de-risking of supply chains.**

It is raised frequently in this paper: that when taken as a whole, with wages in offshore-destination countries rising, the riskiness of those supply chains is no longer a price worth paying for many businesses. As one contributor to this paper suggests – everything matters. Business decisions are taken in the round, and although many companies pursued the offshoring agenda driven purely by cost, their reshoring decisions appear much more nuanced and complex.

One interpretation of the reshoring trend is that an increasing number of companies are seeing their future in agility and innovation: the redevelopment of products, closer relationships with customers, servitisation. It is much more difficult to be reactive to a fast-developing market if supply chains are global and potentially unreliable. Perhaps this is why many reshoring examples (reported at the APMG meeting, and elsewhere) come from consumer-focused industries such as electronics and IT, where success in the market relies on continuous innovation of the product offering.

There is concern, however, that the decline in UK manufacturing over the past two decades has resulted in a perceived drought of adequate supply chains (one of our speakers had to develop machine tooling skills in-house). The prevailing question, that the manufacturing community perhaps feels nervous about asking explicitly, is whether or not the UK is ready to accept this degree of industrial activity back to its shores.

Readiness can mean many things: skilled young people to be employed in supply chain businesses, the correct financing options of supply chains to develop and expand. Government policy in this field includes the Advanced Manufacturing Supply Chain Initiative, the second round for which is due to open shortly (see below). There were, however, concerns raised about the AMSCI’s profile across the sector, and also the perception (rightly or wrongly) that consortia of businesses would have to share sensitive financial information with firms above or below them in the chain.

Additionally, the sector needs to become better skilled (or perhaps more ambitious) in seeking out existing UK suppliers. This requires a huge amount of work and time, something that many Managing Directors of manufacturing firms do not have. There is certainly a role here for Trade Associations to more actively promote companies across sectors. A single online portal perhaps?

One potential result of the reshoring trend may be a refreshed clustering of industries across the UK. Clusters that have seen direct government intervention (such as “Tech City” in East London) are as much about a community of like-minded entrepreneurs as they are about supply chain proximity. If Government is to support manufacturing clusters resulting from the reshoring of supply chains, they will have to examine how best to support those clusters (it might be as much about physical as digital infrastructure, for example).

Above all else, most important to the future prevalence and resilience of manufacturing businesses in the UK is confidence and profile – the reshoring stories contained in this paper are a testament to the great value of manufacturing activity that happens in the UK. The APMG is currently examining the possibility of creating an online platform through which manufacturers can upload their own stories of reshoring, and of re-establishing UK supply chains.

## The Advanced Manufacturing Supply Chain Initiative – Round 2

As announced in the Autumn Statement, the Government will provide £120 million for two additional rounds of the Advanced Manufacturing Supply Chain Initiative. This will support R&D, skills training and capital investment to help UK supply chains achieve world-class standards and encourage major new suppliers to locate in the UK. The new rounds of the AMSCI will be based around a single national funding pot which will be open to companies across the manufacturing sectors. The full criteria for the scheme will be confirmed when the Competition Brief is published on the 28 February.

Please visit the BIS website for more information: [www.bis.gov.uk](http://www.bis.gov.uk)

**The Associate Parliamentary Manufacturing Group is a forum for open debate between Parliament and the UK's manufacturing community. To find out more visit [www.policyconnect.org.uk/apmg](http://www.policyconnect.org.uk/apmg).**

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