HIGH TECH MANUFACTURING INDEX REPORT

Fifth Wave – Winter 2012









GE High Tech Manufacturing - Wave 5

The publication of the fifth wave of GE's six-monthly High Tech Manufacturing Index provides us with an opportunity to reflect on what we have learnt since the survey was first undertaken back in November and December 2010. In November and December 2012, 405 interviews were conducted by ORB International for the fifth wave of the survey.

Companies questioned in the research manufacture a wide range of high tech components and products – in sectors including components engineering, materials manufacture, electronics products assembly, automotive component assembly and manufacture, chemical and formulations manufacturing, robotics and control systems, information and intelligence systems and medical and laboratory equipment manufacturing. A definition of high tech manufacturing businesses can be found in Appendix 2.

GE decided to commission this research back in 2010 in order to better track the fortunes of the UK high tech manufacturing sector. Although of vital importance to the future growth of country's economy there has previously been limited data available on sentiment in this sector. Now, after five waves, the data amassed makes it quite clear how valuable this survey continues to be.

What we've learnt since November 2010

A recurring theme since Wave 1 of the survey in late 2010 has been the serious, continued pessimism UK high tech manufacturers feel about the condition of the overall UK economy. However this has been counterbalanced throughout the period by much more positive views from respondents on the UK high tech manufacturing sector and their own businesses. For example, on average over the five waves 23% of respondents have been positive about the UK economy, compared to 75% confident about their own company's position. However the survey has shown even this has been a rocky ride and levels of sentiment cannot be summarised in quite such simple terms.

There was a real peak in confidence for the sector preceding the Eurozone crisis in Waves 1 and 2 in 2010/2011, which saw confidence in the UK economy peak at 30%; in 2012 the results have shown much less certainty, ranging from 26% confidence in the UK economy in June to 18% in December. Although today the sector is still cautiously upbeat about its own prospects, confidence in the UK economy is not high.











In the face of what have been some very challenging economic circumstances however, the resilience and the determination of the high tech manufacturing sector has been a strong constant. There are a number of reasons for this, but perhaps best explained by Wave 2 when those surveyed highlighted the quality of products, an 'industrial heritage', R&D capabilities and reputation, combining to provide an overall sense of 'quality' that provides UK high tech manufacturing with its edge over competitors.

The index has also shown the versatility of the high tech manufacturing sector as it responds to the economic challenges. Where the early waves of the survey identified a common concern amongst UK manufacturers of competition from the BRICs (Brazil, Russia, India and China), and of the uncertainty in the Eurozone, later waves showed a focus on business development in emerging markets – including by almost 50% of companies surveyed in Wave 4.

In responding to such challenges the UK high tech manufacturing sector is increasingly international and diversified. Companies participating in the survey are not just high tech manufacturers in the better known high tech areas of the UK such as aviation or healthcare. More increasingly they are making products used in the oil and gas, or extractive industries as well as other sectors such as advanced materials, electronics and information systems. It is a trend we can expect to continue.

The skills gap in the manufacturing sector has long been acknowledged across the industry. GE's High Tech Index has consistently shown the lack of appropriately trained and experienced engineers to be a major concern for UK companies. Wave 1 showed that 31% of companies that participated in the survey were recruiting people from outside the UK because of a lack of suitably skilled engineers. Similarly, more than two years later Wave 5 showed the issue persists with almost a quarter of companies in the survey reported having to leave positions unfilled in their workforce due to skills shortage, and almost all (97%) have taken steps to address the issue. Clearly it remains a significant challenge for the industry to overcome.

A call that has been consistently made by those companies surveyed in the last two years is for greater clarity from the government on policies impacting their businesses. The UK high tech manufacturing sector is a major contributor and a key growth sector for the country's economy – assurances, and smart forward-looking initiatives in policy areas such as energy, education, taxation, regulation and overseas trade will be needed to allow it to fulfill this role.

Summary of High Tech Wave Five

The UK high tech manufacturing sector is cautiously upbeat about its prospects for growth in 2013, despite an overall fall in its positivity about the country's economy in the last six months.

Less than one in five (18%) of the 405 high tech manufacturers questioned for the fifth wave of the GE High Tech Index in November / December 2012 said that they felt positive about the current economic situation in the UK. However, this figure increases to 44% when the interviewees consider the conditions for UK high tech manufacturing businesses. Even more encouragingly, over seven in ten (72%) still feel positive about their own businesses' performance, demonstrating that the majority feel that their company is in a good and stable position, despite the picture in the country as a whole.

The high tech businesses surveyed were slightly more positive about the UK economy going forward into 2013. Over a third (35%) felt the overall economic outlook would get better in 2013, although only 2% felt it would get 'a lot better' and 33%, 'a little better'. The most common reasons provided for this cautious optimism were exports to non-Eurozone countries, cited by almost three in five (58%), followed by the weak pound (46%) and falling inflation (32%).

Those questioned were also relatively upbeat about the UK high tech manufacturing sector in 2013. 69% of manufacturers questioned said they felt the outlook for their own business performance in 2013 would be either a little better (54% of those questioned) or a lot better (15%). 40% of respondents felt the overall outlook for the high tech manufacturing sector would be either a lot better (4%) or a little better (36%). 44% felt there would be no change in current conditions.

It is clear though that concerns still persist about the current skills gap in the high tech manufacturing sector. Around a quarter (23%) of those interviewed for the survey reported having to leave positions unfilled in their workforce due to skills shortage.



For two thirds (66%) of these companies this has been for more than one position. Almost all businesses surveyed (97%) have taken steps to overcome the skills shortage. The most popular measures taken include retraining existing employees (79%), investing in new machinery (77%), improving the work environment (67%) and sharing responsibilities (63%). More than half (54%) would also favour the introduction of a Chief Engineering Officer in the UK.

1. Economic Outlook

Although there has been a slight drop in levels of positivity since the last wave of the survey, conducted in June 2012, economic sentiment as regards the conditions in the UK high tech manufacturing sector remains upbeat, albeit cautiously so. While less than one in five (17%) feel positive about the general economic situation in the UK, this figure increases to 44% when those surveyed consider the conditions for UK high tech manufacturing businesses. Even more encouragingly, over seven in ten (72%) feel positive about their own businesses' performance, demonstrating that the majority feel that their company is in a good and stable position, despite the overall picture in the country as a whole.





These figures may paint a promising picture as regards the conditions in the UK high tech manufacturing sector, but it is worth noting that levels of optimism across the board have dropped since the last wave of the survey in June. Levels of positivity concerning the UK's economic situation have dropped eight percentage points in the last six months, although we see a seven percentage point rise in neutrality levels, and just a one percentage point rise in negativity levels.



Levels of positivity regarding the UK high tech manufacturing industry have dropped four percentage points since June 2012; levels of negativity have increased by the same amount. Nevertheless, positivity levels are still eight percentage points higher than they were a year ago in December 2011.



Current situation, UK high tech manufacturing / business, tracking data



This pattern continues when turning to how people feel about their own businesses' performance, where the proportion of people who feel positive is at its lowest since this survey began. The variation in figures is marginal, however; the highest we have seen so far is just 6% higher at 77%, recorded in June 2011.

Current situation, your own business, tracking data



There is though a brighter story as we look towards the future. Outlook for the UK economy over the next twelve months is very optimistic as compared with opinion in the last wave of the survey. Over the next 12 months the net percentage (calculated as all 'better' minus all 'worse' responses) of respondents expecting to see the UK economy improve is 14%, up from 2% in June 2012. The figure for conditions for UK high tech manufacturing businesses is 28% (W4 30%), while the numbers who think the performance of their own business will get better is even higher, at a net score of 62% (W4 60%).

2. Business Sentiment





Those who believe the performance of their business will get better, attribute this to more customer enquiries/ orders/ new business (20%), an increase in exports (17%) and new products or research and development (17%), suggesting that they have concrete reasons to expect that their business performance will improve. Amongst those who expect their business performance to stay the same (24%) or worsen (7%) over the next 12 months, the main reason is lack of demand, cited by a quarter (26%), followed by the state of the economy / consumer confidence (23%).

As compared to 2011, just under six in ten (57%) expect their business to have grown in 2012. It seems, then, that 2012 has not been quite as prosperous a year for some as they hoped it would be, since this figure has fallen from 69% in June 2012. Just over one in ten (12%) expect to see their business decline in 2012 (and for 3% of the sample, this decline will have been by more than 10%). Conversely one in five of those we surveyed (19%), expect their business to have grown by over 10% in 2012.

When looking at the data over previous waves, more respondents describe the economic situation in the UK as improved in the last 12 months (W3 11%; W4 12%; W5 17%). When it comes to their own sector (W3 30%; W4 35%; W5 27%) and their own business (W3 52%; W4 52%; W5 46%) however, fewer believe that the situation has improved over the past year. This suggests, then, that although they feel positive about their industry and their own business, improvement



levels have plateaued, whereas, although they feel least positive about the UK economy, improvements in it are becoming more noticeable.

In terms of the events and circumstances businesses have experienced in 2012, the story remains very similar to the one given to us in June, where several aspects were reported to have had a negative effect on trading performance of manufacturing business. Of these, the most critical are high raw material costs (W4 76%; W5 70%), rising energy costs (W4 66%; W5 66%), and uncertainty in the Eurozone (W4 55%; W5 57%). The factor that is considered to have the most positive impact on trading performance of high tech manufacturing business is continued strong growth in many emerging economies (45%), followed by low UK interest rates (33%). As found last time, negative events have had a much more noticeable impact than positive events.

The interviewees were asked to give their opinion as to why there have been recent indications that they UK is returning to growth. The most common reason provided, cited by almost three in five (58%), is exports to non-Eurozone countries. This is followed by the weak pound (46%) and falling inflation (32%).



Reasons that the UK is returning to growth (top three mentions)

3. Employment & Skills

Four in five (82%) of the companies that took part in the survey employ between 10 and 149 people; 17% have 150-3000 employees and 1% employ more than 3000 people.

With regards to staffing levels, 8% said that they would be looking to reduce the number of people that they employ over the next twelve months. Although this figure is still low, it has increased from 3% in June 2012. Those who are looking to cut the numbers of employees, are unlikely to be considering reducing the numbers of engineers in their staff (just 2% will do so), and instead will be looking elsewhere. It is reassuring, though, that over four in ten are looking to increase both their overall staffing levels (46%) and the numbers of engineers in their business (42%).

Slightly less than three quarters (71%) of those who plan on increasing their staffing levels will be increasing them by between 1% and 10%. One in five (19%) will be increasing them by between 11% and 20%, and a further 7% of those surveyed expect to increase their staffing levels by more than 20%.



Plans for staffing levels over the next 12 months



Around a quarter (23%) report having to leave positions unfilled in their workforce due to skills shortage, and this has been for more than one position for two thirds (66%) of these companies. Almost all businesses we surveyed (97%) have taken steps to overcome the skills shortage. The most popular measures taken include retraining existing employees (79%), investing in new machinery (77%), improving the work environment (67%) and sharing responsibilities (63%). Even the least frequently adopted measure, employing foreign workers, has been undertaken by almost three in ten (27%) businesses.



In addition, more than half (54%) would favour the introduction of a Chief Engineering Officer in the UK.

4. Research & Development, and Innovation

The next section of the survey turned to R&D and innovation in the high tech manufacturing sector. A little less than three in five (37%) of the businesses included in the sample invest between 1% and 5% of their revenues in R&D / innovation. For one in five (19%), this figure is

between 1% and 10% and for the remaining one in five (22%) this figure is more than 10%. Those in Scotland are most likely to be investing more than 10% of their revenue in R&D/ innovation. Interestingly, the higher the proportion of revenue invested in R&D/ innovation, the more likely the company are to expect their business performance to get better over the next twelve months.



Relationship between % of revenues invested in R&D / innovation and predicted business performance

Almost four in five (77%) have encouraged R&D ideas from all parts of the business, while three-quarters have focused the R&D strategy from the top down. Almost half (48%) have driven R&D by collaborating with third parties such as universities, and almost a third (32%) have established a separate R&D department or research lab. Therefore R&D / innovation is clearly a high priority for high tech businesses.





Steps taken as regards R&D / innovation

We asked respondents to the survey to consider how they have changed the ways in which they develop a new product over the past five years. The most common change is that seven in ten (68%) have increased new product development driven by customer relationships. Almost half (44%) have increased their focus on collaborations and partnerships, while two in five (39%) have increased their focus on market research to ensure their product has a market. Three in ten (30%) have speeded up the whole process, decreasing the product development timeframe.

5. Global Markets and Competition

As found in Wave 4, there is feeling among some that over the past 12 months the UK has been more competitive than the major European economies (35% more competitive, 49% the same, 10% less); most think that we have been about the same as the United States, Japan and Canada (23% more competitive, 54% the same, 13% less); and opinion is split regarding our competitiveness with the Brazil, Russia, India and China (BRIC) economies (28% more competitive, 32% the same, 29% less). There is clearly a lack of consensus regarding the UK's competitiveness with all four BRIC markets but it does not appear that, overall, UK high tech manufacturers feel the UK has become less competitive.

GE High Tech Manufacturing Index Report. Fifth Wave – Winter 2012

Similarly, with regards to the next 12 months, there is little agreement. For the major European economies (37% more competitive, 52% the same, 6% less) and the United States, Japan and Canada (23% more competitive, 61% the same, 9% less) most expect us to become either more competitive or to stay the same. Some are clearly more fearful when it comes to the BRIC countries, where 27% expect us to become less competitive (albeit 30% think we will become more competitive, while 36% our position to remain broadly the same). Overall, though, these figures indicate that most do not expect our international competitiveness to decrease.

Over half of our sample (53%) has experienced a slowdown in business with other markets. Most commonly, this is with the European markets – nearly two in five (38%) of those we spoke to reported this. This is followed by China, mentioned by almost one in five (17%), and then by the United States (13%).



Slowdown with business other markets



Problems in the BRIC markets are still only having a limited impact on the UK high tech manufacturing sector; although the proportion reporting an impact has increased since Wave 4, it remains low.

In June 2012, 24% reported that they had suffered reduced demand for products and services to at least some extent; the figure now stands at 29%. The proportion of those who have noticed increased competition as businesses in these markets fight for orders has risen from 36% to 45%. In June we found that 23% had had problems sourcing from suppliers, whereas now 30% have had this problem. Companies are most likely to have been impacted by these problems 'to some extent but not very much', rather than by a 'great deal or 'fair amount'.

6. Availability of Funding

When it comes to the availability of bank funding for those businesses actively seeking it, just 24% believe it to be plentiful / readily available. Four in ten (42%) believe it to be available but on fairly onerous terms, while 34% think it to be either available but on unacceptably onerous terms or impossible to obtain. These figures show almost no change from those collected in June 2012 (26% plentiful / readily available; 43% available but on fairly onerous terms; 39% available on unacceptable terms / impossible to obtain). Despite this picture, three in five of those we spoke to have not considered any alternative forms of funding as a business. Almost one in five, though, (18%) has considered auctioning of invoices / invoice backed financing. The second most common type of alternative funding considered is private equity investment, by 16%, while 12% have considered asset backed financing.

7. Government Policy

The coalition government has now been in the office for two and a half years and this segment of the survey sought to determine the impact of Coalition policies on business. Taxation policies are most likely to have impacted businesses (35% have seen an impact), followed by regulation (31%). The policy area least likely to have impacted business is infrastructure, where only one in ten (10%) have noticed an impact.

It is also thought that greater clarity from the government on these policy areas would benefit businesses; with the exception of infrastructure, approximately two thirds agreed that clarity in each policy area would be an advantage to them.



Availability of funding





Policy areas, their impact, and whether clarity is required from the government



8. Energy

Positive

Negative

17%

ner

66%

38%

Infrastructure

36%

There are high levels of concern about the UK's future energy policy. The vast majority (84%) are concerned about the affordability of energy, while more than half (61%) expressed concern about security of supply. Opinion is split on concern about carbon emissions: 46% are concerned, while 53% are not.

The senior executives who took part in the survey also voiced, where relevant, whether the impact they noticed was a positive or negative one. Overseas trade policy is most likely to have had a positive impact rather than a negative one – almost two thirds (63%) of those who have noticed an impact felt it to be one that is advantageous to their business. Conversely, energy policy is most likely to have had a negative impact, with two thirds (66%) of those who have noticed an impact reporting that it has been one that has been detrimental to their business. When it comes to the two policy areas that impact businesses most frequently (taxation and regulation), the impact tends to have been a negative one.

Type of impact policy has had (amongst those who have noticed)

26%

Taxatic

50%

14%

Regulation

49%

63%

51%

Ed<mark>ucatio</mark>n /

ainin

28%

Overse

Trade

22%





When it comes to concern about the impact of energy policy on the requirements of one's own business, levels of concern are very similar. Four-fifths (80%) are concerned about affordability, three-fifths (60%) are concerned about security of supply, and a little under half (44%) are concerned about carbon emissions.

Concern about energy policy's impact on own business



Around half of the businesses included in our survey (49%) have considered generating their own power on site or investing in energy efficient technologies. Lighting is most likely to have been considered (by 81% of those who are considering generating their own power or investing in energy efficiency). This is followed by insulation (62%) and solar power (61%). Indubitably, the biggest factor to be considered when making an investment in energy efficiency technologies is return on investment (78%), followed by a very considerable margin by tax relief (11%).





Appendix 1 - Case Studies

Cherrytech; Portsmouth – Raymond McComb, Technical Development Manager

Cherrytech, based in Portsmouth, operates in the Electronics Manufacturing Services sector, products include printed Circuit Boards, cable assemblies and flexi circuits.

Cherrytech is positive about the prospects for their business in 2013, the main reason is the launch of a number of their own products next year which have been developed in response to customer feedback. Cherrytech is also launching a product based on energy efficient technology. Its customers have provided feedback that with rising energy bills they need to reduce their overheads, and there is therefore a need for products in this area.

Cherrytech plan to increase the number of engineers they employ in the UK by two to three in 2013, primarily to support with the launch of their new products. Cherrytech currently employ five engineers.

Energy costs have been a concern this year for the company and they estimate that the cost of energy to their business has increased by



about 25%. Cherrytech has implemented a number of initiatives to try and reduce their energy use, such as investing in solar panels, tracking energy use, and changing their lighting systems to make them more efficient.

Raymond Mccomb, Cherrytech Technical Development Manager said: "We have seen the impact of energy costs on our business increase by about 25% this year, and we have implemented a number of initiatives to try and reduce our energy use. However, we are positive about our prospects for 2013, this is because we will start manufacturing products based on our own designs and customer feedback for the first time. One of these is an energy efficient product – with rising energy bills our customers tell us there is a real need for a product of this kind."

Tooltech; Plymouth - David King, Operations Manager

Tooltech is an advanced manufacturing company which provides high end precision tooling and components which are used within the investment casting process for some of the largest aerospace companies in the power generation sectors. Customers include Alcoa, the Doncasters Group and aviation manufacturers.

The company currently employs 14 people. Tooltech is positive about the outlook for their business in 2013, as their customers have reported that their order books are up next year, and Tooltech will need to increase output to meet this demand. They primarily supply equipment for companies based in the UK, but which also have international operations.

The company is planning to hire another two engineers in 2013, they employ eight engineers currently and one apprentice. In addition to hiring another two engineers they may also hire another engineering apprentice in September 2013.

The cost of energy has become a more noticeable outgoing for Tooltech in 2012 and the company has been paying increasing attention to this factor when tracking all fixed costs each month, previously energy was a cost which was paid without question. Although it is not possible for Tooltech to run their CNC (computer numerical control) machines on eco-mode, they are looking into other ways to become more energy efficient and are looking into investing in a new compressor. David King, Operations Manager at Tooltech said: "Where before energy costs were an outgoing which we paid without question, the significant increase in energy prices in the last year means we now pay increasing attention to our energy costs at the end of each month."

Scobie & Mcintosh; Yorkshire and Edinburgh – Mark Stevens, Sales Director

Scobie & Mcintosh provide used and new refrigeration and bakery equipment (such as bakery mixers and dough dividers) and a maintenance service to customers in the UK. There are also elements of their operation in markets such as Afghanistan, Dubai and America. The company currently employs about 80 people in the UK, and is positive about the outlook for 2013 given work underway to refocus their own business with regards to resourcing and processes and targeting specific groups of customers to ensure their business is sustainable in years to come.

Scobie & Mcintosh plan to hire about ten more engineers in 2013, but this is not a fixed number – it will depend on need and may be greater. The company currently employs about 50 Engineers and hired four additional engineers in 2012.

The company has noticed all fixed costs increasing in 2012 – including energy – but is in a challenging situation as it is unable to pass on these costs to the customer given the current competitive environment. To reduce energy use the company has invested in low energy bulbs and trackers on their vehicles to monitor and reduce fuel consumption. The company is also in the process of reviewing service providers at the moment to reduce fixed costs for 2013, and has started looking into what future energy market reform policy will mean for the business in coming years.

Mark Stevens, Scobie & Mcintosh Sales Director said: "Scobie & Mcintosh plan to hire about ten more engineers in 2013, we are positive about the outlook for our business in 2013 because of work underway to refocus our own resources and processes."

Trig Engineering Limited; South West England – Jamie Williams, Manufacturing Accountant

Trig Engineering operates in the field of engineering plastics, employing around 85 people in the South West of England. Trig Engineering focuses on the production of precision engineering plastic components.



It has numerous operations ranging from milling and turning of high performance polymers to semi-finished engineered plastics.

The company sees a great opportunity for expansion in the UK and is actively moving into new sectors to capitalise on this potential growth. It is also looking to increase exports in addition to the domestic demand and believes its own confidence is shared by others in the industry. One move the company has made is to directly appoint an applications manager to ensure that Trig Engineering's Research and Development matches the demands of its customers. The company hopes that by incorporating customer opinion at an earlier stage of product design it can tap into currently unmet demand and anticipate the future needs of clients.

Jamie Williams, Manufacturing Accountant at the firm commented that "at Trig Engineering we are confident about prospects next year, directly because of our investment in Research and Development. Efficient collaboration with our customers at the R&D stage will hopefully ensure we become their supplier of choice."

Appendix 2 – A diverse sector

Since the GE High Tech Manufacturing Index launched two years ago the six monthly survey has highlighted how high tech manufacturing in the UK embraces a wide variety of businesses, large and small, and in a myriad of different industries and sectors.

The transformers

Despite their current focus on advanced technologies, many of the companies surveyed in the Index have a long history. In the first survey wave we asked businesses about their history. 27% of the businesses polled had been in existence since the 1960s with 11% of the businesses surveyed founded before 1945, and 5% dating back to pre-1900. The mean average year in which the businesses polled were established as a trading entity was 1972. Many of the businesses surveyed have evolved and responded to changing demand with 44% saying they had 'developed over time from being a traditional to an advanced/high tech manufacturer'.

The 'lab coat' entrepreneurs

Other younger businesses had often been established by entrepreneurs who had an original idea (20%) or set up by directors who had previously worked in another high tech business (22%). 55% of those questioned in the launch survey said that on balance the business had been established by entrepreneurial academics, scientists or engineers who went into business, while 30% said the business had been set up by business people making an investment, with 13% commenting that it was a mix of the both or the business had been set up in a different way. Interestingly just 2% said they had specifically been spun out of a university department or research project.

The meteors

Some of the businesses questioned are extremely fast growing. In the previous survey wave (June 2012) 26% said they expected growth of over 10%. Generally the sector is much more buoyant and optimistic than other UK sectors.

The globetrotters

Another feature of many of these businesses is a highly international customer base. In the launch survey we found 87% of businesses questioned said they exported some of their products and services, with 29% of them saying exports account for more than 50% of the turnover. When asked to name markets to which they export to more than 50 countries and regions were cited. Unsurprisingly the weak pound is regarded as a strong positive factor for growth for these businesses.

The niche players

Each wave of the survey highlights how many of these UK high tech manufacturing businesses operate in very specialist and sometimes esoteric business areas. Mainstream sectors represented in each survey include aviation, automotive, chemicals, healthcare, electronics, energy, agriculture, marine and construction.

However when asked to describe 'what does your business do?' since the Index was launched a myriad number of niche specialisms have been mentioned.

One interesting sub-set identified in the Index has been businesses involved in seemingly traditional activities, now with a high tech twist. Good examples are sail making, fishing boat builders and producers of high tech and specialised milking machinery.

There were also many examples of the more unusual and esoteric areas that UK high tech manufacturers operate in. Manufacturers



surveyed for the Index have made products as diverse as aircraft interiors, specialised optical and dental equipment for dentists and opticians, products to service laboratory 'clean rooms', high tech crash barriers and traffic light systems, advanced artificial knee and hip joints, high specification marine navigational equipment, motorcycle chassis and suspension systems and many others.

Appendix 3 – Survey details

Every six months, GE undertakes a survey of senior executives working in the UK High Tech manufacturing sector. The first survey took place in November / December 2010, and was repeated in Summer 2011, Winter 2011, and Summer 2012. This report provides an update into the state of the sector six months later.

ORB International conducted the fifth wave of the survey of 405 senior decision makers in UK High Tech businesses between 19th November and 3rd December 2012. All businesses had at least 10 employees, and they were defined as High Tech on the basis that they:

- To at least some degree "use a high level of design or scientific skills to produce technologically complex products and processes usually of a high value".
- Are a primary manufacturer of components, equipment or products rather than an assembler of components that are sourced entirely from external suppliers.
- Are characterised by at least three of the following attributes:
 - Has a highly skilled workforce.
 - Produces technically complex (Hi-Tech) products.
 - Uses advanced, innovative or cutting–edge technology to produce its products.
 - Produces products with a high added-value.
 - Utilises a high level of design, innovation or creativity.
 - Makes extensive use of computer, high-precision and information technologies.
 - Engages in a large amount of Research & Development (R&D)
 Has high levels of productivity i.e. not necessarily high volume but efficient production processes / high value of output per employee etc.
 - Provides consultancy and/ or advisory services in relation to its products.

The research was conducted over the telephone, using computeraided telephone interviewing (CATI) methodology. We spoke to 176 respondents who had participated in previous waves of this survey in addition to 229 newly recruited respondents.

Of those we spoke to, 78% expect the turnover of their UK operations to be between £0 and £16 million in 2012, 19% expect it to be between £16 million and £800 million, and the remaining few respondents expect it to be over £800 million.



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