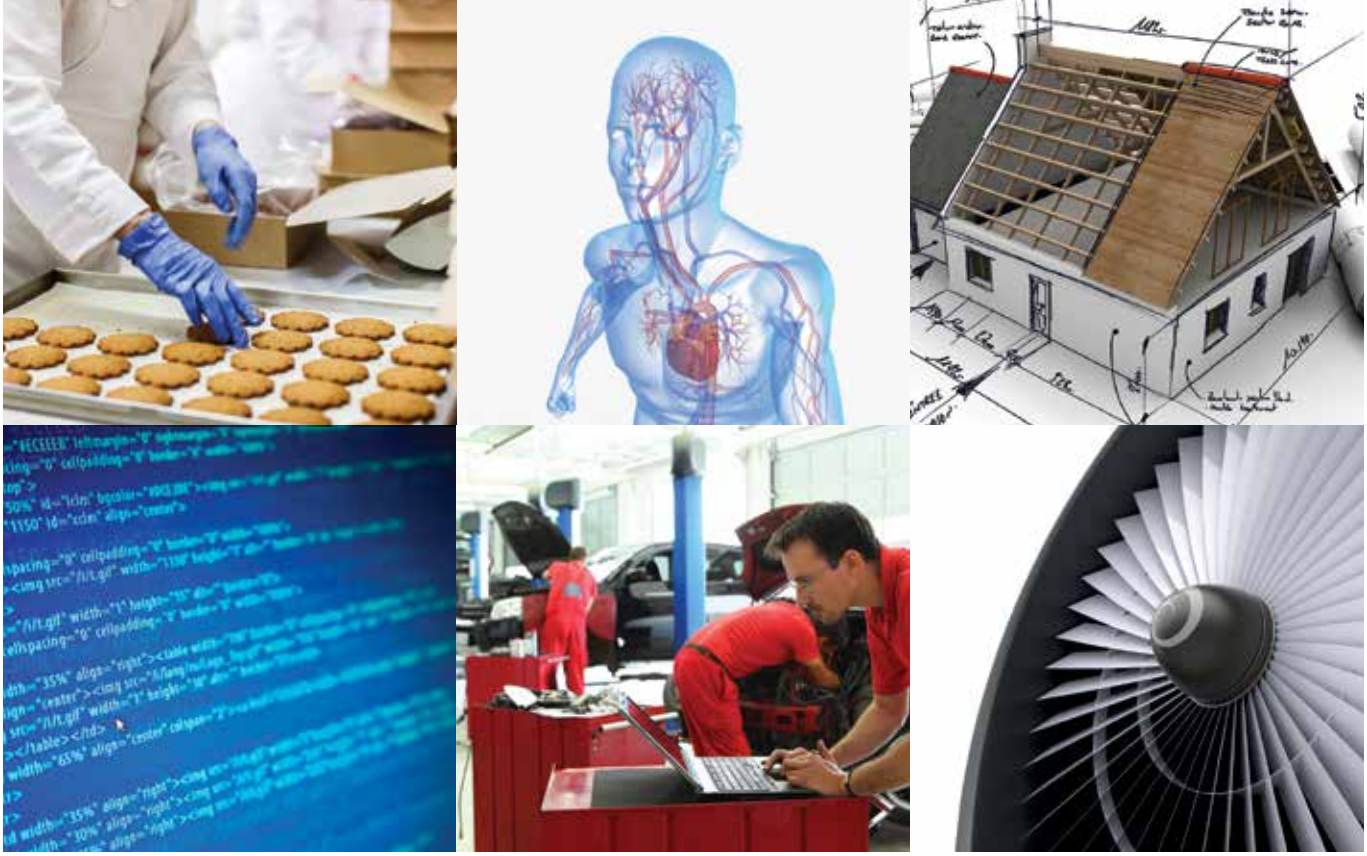

UK SME Landscape and Standardization Research

– Stage 1 Report

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BSI

UK SME Landscape and Standardization Research

Stage One Report

March 2014

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Foreword

Micro, small and medium sized enterprises (SME) represent a large and important section of British industry; however these organizations face many challenges that can impact their performance and growth potential. Government policies including the Department for Business, Innovation & Skills and HM Treasury policy, 'Making it easier to set up and grow a business' recognise the importance of helping SMEs grow in order to benefit the wider UK economy. To achieve this, small businesses often need assistance to increase sales (and particularly exports), to improve the skills of their staff and to innovate more effectively. Standards and standardization can and should play a major role to help SMEs rise to these challenges.

BSI, in its role as the UK National Standards Body (NSB), is committed to increasing its support for the SME community to take advantage of the benefits of voluntary business standards. We are seeking to increase the opportunities for SMEs to participate in the development of standards that set out agreed good practice and to access the outputs in ways that are beneficial and convenient for them.

As part of this commitment, BSI has commissioned research into the SME landscape in the UK to deepen our understanding of the needs of SMEs in relation to standardization and the benefits that can flow from an increased level of engagement between the NSB and SMEs in different sectors of the economy. This research was enabled by the Department for Business, Innovation & Skills as part of its on-going commitment to supporting innovation in the UK.

The output of this research programme, which focuses on the important industry sectors of aerospace, automotive, construction, food, healthcare and ICT will provide a snapshot of the UK SME landscape and attitudes towards the role of business standards. This first stage report combined with the outcomes of a second phase due later in 2014 will be used to inform BSI's strategy to involve SMEs in standardization and to develop standards based solutions that can further improve small business performance and potential.

Scott Steedman CBE
Director of Standards
March 2014

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Executive Summary

Background

BSI Group is a global business that helps organisations to enhance their performance by creating standards of excellence and by delivering a range of services that improve organisational effectiveness. This research is intended to help BSI develop a better understanding of the UK SME landscape. The project follows a previous study commissioned by BSI into the needs of SMEs within emerging technologies which was delivered by Marketwise Strategies over the course of 2013.

Although BSI had a need to understand the landscape across all sectors of the UK economy, it wished to focus in particular depth upon:

- Aerospace
- Automotives
- Construction
- Food
- Healthcare
- ICT.

The research is being undertaken in two stages. This report relates specifically to Stage One of that research.

Research objectives

Specific research **objectives** for Stage One were as follows:

1. To determine the numbers of and distribution of SMEs within the UK economy.

2. To understand the **regional breakdown of SMEs per sector** across the UK (including the English regions, plus Scotland, Wales and Northern Ireland).

3. To determine the number of SMEs in each sector by employee size band (e.g. 1-9; 10-49; etc)
    a. To understand the regional distribution of different size-bands of SME by sector (as far as is possible from the available data)

4. Within each sector, to detail the primary business function of SMEs in the UK economy i.e. to identify the nature of the manufacturing and service activities in which SMEs are engaged

5. To note any other significant features of the UK SME landscape that can be discerned via desk research (e.g. identifying sectors in which numbers of SMEs appear to be growing; any notable changes in the SME landscape within different sectors over recent years)

6. Whilst analysing the SME landscape across the UK economy as a whole, to focus in **particular depth** on the aerospace, healthcare, construction, automotive, food and ICT sectors.

Further research objectives pertain specifically to Stage Two. Those objectives are not addressed in this report.

Methodology

The Stage One research was completed through desk research. No interviews were undertaken.

Two key sets of statistical sources were used for the research:

- ONS datasets on UK Business Activity, Size and Location, published annually, in October, as a snapshot of the Inter Departmental Business Register (IDBR).
- Business Population Estimates, published annually in October by BIS.

In both cases, comparable data for the years 2011, 2012 and 2013 was obtained.

The principle adopted in the research was to use the ONS data to map statistics on business population against BSI's six specified sectors, and to understand the primary business functions within those sectors; and to use BIS data where an understanding of the total business population was more important than a detailed breakdown by sector.

Subsequent to an analysis of the UK SME landscape as a whole, the research focused in more depth on the six sectors specified (aerospace, automotive, construction, food, healthcare and ICT). This was in order to focus on the wider issues and evolution of the six sectors, to contextualise statistical data, and to report upon wider issues within these sectors concerned (e.g. SME engagement with global manufacturers and markets).

Research focused on industry and government reports, supplemented by online news sources specific to the sectors in question.

Key findings

SMEs in the UK economy: overview

Of the 4.9mn businesses in the UK, **SMEs** account for:

- 99.9 per cent of all private sector businesses in the UK,
- 59.3 per cent of private sector employment,
- 48.1 per cent of private sector turnover,
- 14.4 million employees (small businesses alone accounted for 47 per cent of private sector employment and 33.1 per cent of turnover),
- A combined turnover of £1,600 billion

ONS data indicates that there are **2,158,665 registered SMEs** in the UK' the number of **unregistered** SMEs is in the region of 2.7 million.

The distribution of SME employment is uneven across different sectors of the economy:

- In the financial and insurance sector, only 27.5 per cent of employment was in SMEs.
- However, in the agriculture, forestry and fishing sector virtually all employment (95.4 per cent) was in SMEs.

Of the 4,872,690 UK SMEs, just over three-quarters (75.1%) are single-person businesses with **no employees**. The majority of these (55.9% of total SMEs) are also **unregistered**.

At the opposite end of the scale, there are only 1,750 UK SMEs that employ between 200 and 249 people, accounting for a fraction of a percent of the total.

In almost all sector, the largest proportion of SMEs are unregistered businesses with no employees.

- In two sectors, Agriculture, Forestry and Fishing (A) and Real Estate Activities (L) the largest number of SMEs are *registered* businesses with no employees,
- In Accommodation and Food Service Activities (I), the largest number of SMEs have 2-4 employees.

Among the 4,872,690 SMEs in the UK:

- the largest sector (by SIC section) is 'Construction' (F), which accounts for 18.3% of the total population (890,560 businesses),
- this is followed by 'Professional, Scientific and Technical Activities' (M) and 'Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles' (G)

The largest proportion of UK SMEs (17.2%, or 839,515 businesses) are in London, with the South East (16.2%; 789,515 businesses) closely behind

- Wales, the North East and Northern Ireland have the lowest proportion of SMEs in the UK with fewer than 3% of the SME stock each.

Regional breakdown of SMEs by SIC category

Of the main sectors of the UK economy (i.e. the broad categories into which SIC codes fit):

- The **South West** has the UK's greatest concentration of SMEs in 'Agriculture, Forestry and Fishing' (SIC section A), accounting for 16.1% of the UK SMEs in that sector. **Scotland** accounts for over a quarter of registered SMEs in 'Forestry and logging' (division 02) and almost half of those in 'Fishing and aquaculture' (03).

- The greatest number of SMEs in SIC sections B, D and E ('Mining and Quarrying; Electricity, Gas, Steam and Air Conditioning Supply; Water Supply; Sewerage, Waste Management and Remediation Activities') are in the **North West** (15.8%) and the **East of England** (14.2%).

- Manufacturing SMEs (SIC section C) have the greatest presence in the **South East** (13.7%) and **North West** (11.9%). Manufacturing consists of a large number of companies and ONS data gives an indication of different regions' strengths. Notably:
    - For SIC division 21, ('Manufacture of basic pharmaceutical products and pharmaceutical preparations'), which can be considered part of the Healthcare sector, a fifth of registered SMEs are in **London**.
    - 1 in 6 registered SMEs in division 29 ('Manufacture of motor vehicles, trailers and semi-trailers', and part of the Automotive sector) are in the **West Midlands**.

- The biggest concentrations of SMEs in 'Construction' (SIC section F) are in the **South East** (15.7%) and **London** (14.1%). ONS data for registered SMEs indicates that London has a particular focus of SMEs engaged in the 'Construction of buildings' (SIC division 41), with 17.5% of the UK total. The **South East** and **East of England** have the highest numbers of registered SMEs in 'Civil engineering' (division 42) and 'Specialised construction activities' (division 43).

- SMEs in the 'Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles' (SIC section G) are most numerous in **London** (14.9%) and the **South East** (14.1%).

- After London (17.1%), the largest number of 'Transportation and Storage' (H) SMEs are in the **North West**.

- SMEs working in 'Accommodation and Food Service Activities' (I) are most numerous in **London** (14.2%), the **South East** (12.0%) and the **North West** (11.6%).

- Of all the SIC sections, 'Information and Communication' (J) SMEs are among the most concentrated in one part of the country. 27.4% of SMEs are in **London**, with a further 19.3% in the **South East**. Some business activities are even more focused on **London**, including 'Motion picture, video and television programme production, sound recording and music publishing activities' and 'Programming and broadcasting activities'.

- There is a strong south of England focus for 'Financial and Insurance Activities' SMEs (K), with 27.5% based in **London**, 19.4% in the **South East**, and 14.8% in the **East of England**. ONS data for registered SMEs reveals some regional variation in distribution by business activity, however. The **North West**, for example, dominates in 'Insurance, reinsurance and pension funding, except compulsory social security'.

- 'Real Estate Activities' SMEs (L) have the highest representation in **London** (23.3%), the **South East** (16.2%) and the **South West** (8.7%).

- SMEs in 'Professional, Scientific and Technical Activities' (M) are most concentrated in **London** (21.5%), the **South East** (20.5%) and the **East of England** (10.4%). Activities particularly concentrated in **London** are 'Advertising and market research' and 'Legal and accounting activities'.

- 'Administrative and Support Service Activities' SMEs (N) are most numerous in **London** (18.8%), the **South East** (16.6%) and the **East of England** (10.9%). Travel agency, tour operator and other reservation service and related activities' are especially concentrated in **London**.

- 'Education' SMEs (P) are concentrated in the **South East** (18.8%) and **London** (18.4%).

- SMEs in ‘Human Health and Social Work Activities’ (Q) – comprising a large part of the Healthcare sector – are most numerous in **London** (17.3%), the **South East** (16.6%) and the **North West** (11.5%). **London** and the **South East** have the highest number of registered SMEs in all three divisions (86 ‘Human health activities’, 87 ‘Residential care activities’ and 88 ‘Social work activities without accommodation’, though the **South West** is also strong (12.0% of the division’s registered SMEs) in ‘Residential care activities’.

- ‘Arts, Entertainment and Recreation’ (R) is the sector with the greatest proportion of SMEs in a single region (27.6% of the total, in **London**). **London’s** dominance is especially marked in ‘Creative, arts and entertainment activities’ (SIC division 90), where it accounts for 43.6% of registered SMEs.

- SMEs engaged in ‘Other Service Activities’ (S) are most numerous in the **South East** (16.2%), **London** (12.6%) and the **East of England**.

Aerospace

The aerospace sector is one of the most successful manufacturing sectors in the UK economy. It has a 17% global market share of aerospace industry revenues, making the UK’s civil aerospace industry is the largest in Europe and second largest in the world.

The 2,375 companies in the aerospace (as of 2013) comprise 0.1% of the UK’s registered SMEs. The total number of SMEs in the sector has grown by 0.6% between 2011 and 2013. The South West, North West and East Midlands have the highest numbers of aerospace employees in the country.

The UK aerospace sector is divided into two similarly-sized sub-sectors:

- Civil aerospace, whose growth is expected to accelerate in the next two to three years as a result of growing international orders;

- Defence aerospace, which has fared less well in recent years as a result of austerity approaches to public spending in the UK and elsewhere.

The sector consists of around 6 OEMs, with companies at Tier-One, Tier-Two and below supplying these with parts and components.

The sector has a strong and 'joined up' industrial strategy, which renders the UK an attractive location for new international investment in civil aerospace. The UK has a strong comparative advantage in the development and production of: wings; engines; aero structures; advanced systems.

Rising global demand could generate over £474 billion in orders for UK companies, particularly from Asia, the Middle East and South America. UK aerospace SMEs already have a proven track record as suppliers to the global aviation industry.

Core **challenges** faced by the sector are:

- Ensuring that UK SMEs are able to adapt to substantially different product and manufacturing technologies (e.g. Additive Manufacturing; Plastic Electronics) that are likely to be used to produce the next generation of aircraft.
- New orders in the defence aerospace sub-sector falling due to a reduction in defence orders as Governments continue to make budget cuts.
- High R&D costs, challenges in accessing funding, and elements of complacency among tier-two and lower companies, meaning a lack of innovation at these levels of the supply chain.

Key **government initiatives** in aerospace include:

- The Strategic Vision for UK Aerospace, launched July 2012.
- The Aerospace Growth Partnership (AGP), a unique partnership between Industry and Government that has created a shared vision for the UK Civil Aerospace sector for the next 15 years and beyond.
- The **Aerospace Technology Institute** (ATI), created with £2 billion of funding to help develop new technologies for the aerospace industry.
- The **UK Aerodynamics Centre**, a £60 million state-of-the-art aerodynamics research centre to achieve a step change in the UK's capability in complex aerodynamics.

- The **National Aerospace Technology Exploitation Programme (NATEP)**, which supports smaller companies to innovate in products and manufacturing techniques.
- The creation of **500 new Masters level graduate places** through joint industry and government bursary funding.

Automotive

In 2011 the UK automotive sector produced over 1.4 million cars and 2.5 million engines, exporting in excess of 80% of its production. There is an expectation that it will be producing some 2 million vehicles by 2015. The sector generates around £50 billion in annual turnover and has recovered from recession, with production of both cars and commercial vehicles up 12% over the first half of 2012.

- As of 2013, the 70,200 companies within Automotive account for 3.3% of the SMEs within the UK. Of those, by far the largest number are engaged in the 'Maintenance and repair of motor vehicles' (SIC 4520).
- The total number of SMEs in the sector grew by 1.5% over the two-year period 2011 to 2013.
- There is clustering in the West Midlands, Northern Ireland, the Leeds-Bradford area and Humberside.

The UK automotive supply chain typically generates £4.8bn of added value annually. About 80% of all component types required for vehicle assembly operations can be procured from UK suppliers.

The sector is structured in a manner very similar to Aerospace, with multiple tiers. Supply chains of OEMs are typically split by commodity (e.g. sub-frames, exhausts, radiators and trim/bodywork is typically sourced from the UK, whereas electrical components tend to be sourced from the Far East).

The Automotive Council suggests that the three leading UK supply chain opportunities are in engine casing, steering systems and trim (door cards, headlining, and plastics).

The main challenges for automotive SMEs are:

- Barriers to growth, as follows:
    - Poor understanding of the automotive sector among banks and lenders, who often insist on personal securities as collateral for business loans, despite the sector's health.
    - Deteriorating credit conditions, and declining availability of credit
    - Lack of awareness of finance options among SME owner-managers, and a conservative approach to investment among some of these.

- A shortage of skilled workers and apprentices.

- Meeting the needs of rapidly growing UK-based OEMs (the Automotive Council has suggested that there are currently around £3bn of unfulfilled opportunities for OEMs to buy from the UK supply chain).

- Meeting the challenges posed by the unfolding **transition to low carbon transportation** and **new supply chain opportunities**. The Automotive Council estimates that by 2040 no new car manufactured in Europe will be powered solely by a petrol or diesel powertrain.

Key **government initiatives** in the automotive sector are:

- *Driving Success: UK automotive strategy for growth and sustainability*, a strategy for the future of the UK automotive industry over the next five years.
- The government and automotive industry investing £500 million each over the next ten years in an **Advanced Propulsion Centre** to research, develop and commercialise the technologies for the vehicles of the future.

Construction

Construction is one of the largest sectors of the UK economy, contributing almost £90 billion to the UK economy (or 6.7%) in value added, and comprises over 300,000 businesses covering some 2.93 million jobs (equivalent to about 10% of total UK employment). 14% of the UK's registered SMEs are in the Construction sector.

- There was a significant fall in the number of registered SMEs between 2011 and 2013 across several of the most sizable SIC classes (e.g. the number of SMEs engaged in the 'Construction of commercial and domestic buildings' (SIC 4120) fell by 6.0%, while the number of SMEs within 'Development of building projects' (SIC 4110) dropped 13.7%.
- However, the overall reduction in the number of SMEs was a more modest 1.2%, with the large falls in some classes offset by big increases in others (for example, an 18.5% increase in the number of registered SMEs engaged in 'Architectural activities' (SIC 7110) between 2011 and 2013).

The sector was heavily impacted by the recession. However, recent data has shown pick-up in the construction economy, with activity in January 2014 growing at the fastest rate since 2007.

The UK construction sector is characterised by **high levels of fragmentation** with 83% of firms employing no more than one person. There is a very high proportion of self-employment in the sector compared with mainland Europe.

- For a 'typical' large building project (i.e. the £20 - £25 million range) a main contractor may be directly managing around 70 sub-contracts of which a significant proportion are worth less than £50,000.

Key challenges facing construction SMEs are:

- Difficulties in accessing finance compared with other sectors (because lenders view construction SMEs as higher risk than SMEs elsewhere).
- **Low levels of innovation** compared with other sectors because of:
    - A strong culture of subcontracting
    - Concerns over product and professional liability
    - A culture of risk-aversion both among contractors and among consumers.
- Difficulties in winning work for major public sector contracts.
- Skills gaps (around 20% of vacancies in construction are hard to fill).
- Driving export growth in a sector that has historically supplied domestic markets, particularly among construction contractors (among whom only 6% export at present). Worldwide demand for green buildings, mass housing and world-class architecture could collectively increase exports

three-fold by 2025. However, this is likely to require cultural change within a sector that has historically overwhelmingly served domestic markets.

The Government's Industrial Strategy for Construction aims to narrow the trade gap in the UK construction industry by doubling exports. There are also various initiatives to deregulate planning laws in an effort to increase both residential and commercial building in the UK.

Food

The 73,505 SME businesses in the Food sector account for 3.4% of the registered SMEs in the UK. If retail is stripped out of this figure, the remaining 21,325 enterprises account for 1.0% of registered SMEs.

By far the largest class among food retailers are "generalist" stores that do not specialise in particular types of food or drink. Of specialist stores, those offering meat products comprise the second largest class of SMEs.

Outside of retail, the largest number of SMEs consistently fall within SIC 4634 (including the 'Wholesale of fruit and vegetable juices, mineral water and soft drinks' and the 'Wholesale of wine, beer, spirits and other alcoholic beverages'). This class has also seen significant growth in the number of SMEs (of 8.8%) between 2011 and 2013.

- Overall, the sector saw a 0.6% increase in the number of registered SMEs between 2011 and 2013, although if retailers are removed from these figures then the remainder of the sector grew its SME base by 2.4% over this period.
- Of the most sizable business functions, the 'Manufacture of beer' (SIC 1105) has seen business numbers grow by 32.7% over the period.

As of 2013, the food and drink manufacturing industry generated an annual turnover of £76bn. It is the largest manufacturing industry in the UK.

- SMEs account for 95.6% of food and drink manufacturing businesses, although this varies between different sub-sectors (the bread, biscuits and cakes and meat manufacturing sectors contain a very high proportion of SMEs, whilst the dairy sector is considerably more consolidated).

- The retail and raw materials processing sides of the industry are much more consolidated.

Barriers to innovation among SMEs in the food industry are:

- Obtaining capital funding for technological innovation.
- A shortage of appropriately skilled staff.
- Some cultural barriers.
- Consumer habits in an era of squeezed incomes.
- A lack of collaboration within the supply chain with regard to using collective approaches to solve technological problems.

90% of SMEs in the industry do not currently export and those that do predominantly target neighbouring European markets. UK food and drink exports have, however, grown by 61% over the last 5 years.

Sustainability is a major challenge within this sector; the Food and Drink Federation's five-fold environmental ambition includes various aims concerning the landfilling of food and packaging waste, the reduction of CO_2 emissions.

The 2012 Food and Drink International Action Plan (developed by Defra, UKTI and the farming, food and drink industry) aims to:

- encourage more SMEs to explore overseas opportunities and supporting those who already export to do more
- shift the focus of the sector towards the opportunities of emerging economies where there is the greatest future growth potential

The Plan was jointly devised between Government and industry after six months of consultation.

Healthcare

The 92,965 companies within Healthcare account for 4.3% of the registered SMEs within the UK. Healthcare saw a 7.8% increase in the number of registered SMEs

between 2011 and 2013. Only three of the 17 SIC classes represented in the sector have seen a fall in the number of SMEs over this period.

The healthcare sector in the UK consists of:

- **The social care economy**: The adult social care economy in the UK is valued at an estimate £43bn. More are employed in this specific sector than in construction and food and drink. The social care sector is dominated by SMEs, located throughout the UK.

- **Medical technology**: This sub-sector contains over 3,000 companies, more than 80% of which are SMEs. Its combined annual turnover is £16bn and growing. There is strong clustering in the West Midlands, the East Midlands and the East of England. There is likely to be significant growth potential for the **global medical technology market** in the future because of an ageing world population, and a combination of growing populations and expanding health coverage in emerging markets (e.g. China; India; South America).

- **Pharmaceuticals**: Most SMEs operating in the UK pharmaceuticals industry are involved in small molecule drug development, followed by companies who are specialist suppliers and those involved in therapeutic proteins. While most UK regions host some pharmaceutical companies, the South East, East of England and London together have well-recognised clusters. Significant concentrations of activity can also be found in the North West, Yorkshire and the North East.

- **Medical biotechnology**: This grouping comprises 979 UK companies, employing close to 26,000 individuals and generates a turnover of £3.7bn. 98% of all companies in this sub-sector are SMEs.

Barriers to successful innovation among medical technology SMEs include:

- The growing cost of R&D;
- A regulatory environment designed to protect patients, leading to longer development compared to other sectors;

- The conservative nature of patient care, limiting the adoption of new technologies;
- The fragmented nature of procurement;
- The pace of technology innovation outstripping the ability of users to adapt to the way healthcare is delivered.

Domestically, selling into the NHS is a major challenge faced by SMEs.

Government initiatives that aim to assist SMEs in the healthcare sector include:

- The Strategy for UK Life Sciences, which aspires for the UK to become the global hub for innovative life sciences in the future.

- NHS England's overhaul of the 3millionlives programme (an initiative to develop telehealth and remote care services in England, and to deliver these to 3 million people by 2017) in order to secure greater input from SMEs.

- Changes to the objective of the **NHS Supply Chain**, which now aspires to improve SME engagement with the NHS.

ICT

As of 2013, the 165,170 registered SMEs in ICT account for 7.7% of the UK total. However, recent research from the National Institute of Economic and Social NIESR Research has suggested that there could be as many as **270,000** ICT companies in the UK.

ICT has seen more than 18,000 net SMEs (an increase of 12.2%) added between 2011 and 2013. Notably, what is now the second most important SIC class in terms of number of ICT SMEs – 6201, covering 'Ready-made interactive leisure and entertainment software development' and 'Business and domestic software development' – grew by 57.0% to add more than 10,000 enterprises over the period.

- Around 80% of ITC companies are located in urban areas (i.e. a city of at least 125,000 people).
- London has by far the highest concentration of ICT companies in the UK, and the highest concentration of such companies in the whole of Europe.
- The UK digital economy is also concentrated in the areas to the West of London, such as Basingstoke, Newbury and Milton Keynes. Areas like Aberdeen and Middlesbrough also show high concentrations of digital economy activity.

Barriers to innovation in ICT are lower than in other sectors; core challenges are:

- An inability of software developers to "keep up" with rapid advances in hardware
- Concerns about the data security of the 'cloud'.
- Maintaining quality of output across the sector, given the variety of potential developers that can participate.
- A lack of skills in the UK in programming in general, with specific weaknesses in multi-core and low-powered environments.

Government initiatives for ICT include:

- The £10mn **Connected Digital Economy Catapult**, which aims to commercialise innovation among SMEs.
- The **Technology Strategy Board Enabling Technologies Strategy**, which contains a number of proposed actions for the SME ICT economy.
- The Government's forthcoming digital communications infrastructure strategy.

Implications for Stage Two research

The six sectors researched have returned to growth after the recession (particularly Aerospace and Automotives) and all show clear evidence of a growing and high-value SME-led supply chain. All have a focus on innovation and on growing exports among SMEs, although appear to be at different stages in this process.

We therefore recommend that these six sectors be the continued focus of research at Stage Two. However, given their size, the choice of companies for inclusion in the survey and interviews at Stage Two will need to be carefully managed. In particular, it will be essential to ensure a representative spread of companies of different sizes, at different points in the supply chains and with different primary business focal points to ensure the most robust data.

1 Introduction

1.1 Research overview

BSI Group is a global business that helps organisations to enhance their performance by creating standards of excellence and by delivering a range of services that improve organisational effectiveness.[1] This research is intended to help BSI develop a better understanding of the UK SME landscape. The project follows a previous study commissioned by BSI into the needs of SMEs within emerging technologies which was delivered by Marketwise Strategies over the course of 2013.

Although BSI had a need to understand the landscape across all sectors of the UK economy, it wished to focus in particular depth upon:

- Aerospace
- Automotives
- Construction
- Food
- Healthcare
- ICT.

The research is being undertaken in two stages. This report relates specifically to Stage One of that research.

1.2 Context

BSI wishes to engage more actively with SMEs as part of its longer term business strategy. It is very keen for SMEs to become more involved in the writing of new

[1] Those services extend from quality assessment and verification to product certification, employee training and supply chain analysis and improvement.

standards and has recently established an SME forum in order to enhance interaction with small businesses with regard to gathering feedback on national, European and international policies and strategies that impact on SMEs.

- The Forum provides an opportunity for SMEs to engage with BSI on strategic and policy issues through virtual and face-to-face meetings. It is open to individual SMEs as well as organisations collectively representing SMEs.

- The Forum uses the feedback that SMEs provide to help BSI shape policies regarding national SME initiatives, and its interactions within Europe and internationally.[2]

The need to engage SMEs in the process of developing new standards is also partly driven by the 2012 European Standardisation Regulation (EU) No 1025/2012.[3] This:

- Imposes an obligation upon those developing standards within the EU area to engage with stakeholders, including SMEs
- Requires organisations that establish standards at national level (including BSI) are required to report annually to the EU Commission on this.[4]

1.3 Research objectives

1.3.1 Stage One research

The Stage One research focused on the SME landscape across the UK economy as a whole in order to reach conclusions about whether the six sectors that BSI wished to be the focus of Stage Two were the most appropriate (and therefore whether revisions to the choice of sectors might be appropriate in light of the

[2] See http://www.bsigroup.com/en-GB/standards/who-uses-standards/standards-and-small-business/

[3] See http://ec.europa.eu/enterprise/policies/european-standards/standardisation-policy/general-framework/index_en.htm

[4] This detail was provided during an initial project inception meeting at BSI, Gunnersbury on January 15th 2014. Present at this meeting were: Jacquie Potts (Marketwise Strategies), John Gibson (Marketwise Strategies), James Berry (BSI), Jonathan Albrow (BSI) and Jim Shuker (BSI).

findings). In seeking to better serve SMEs and to support them in enhancing their performance, BSI therefore first wished to understand:

i. The sectors of the UK economy that SMEs are currently operating in
ii. Where those SMEs are based (including, for example, numbers of SMEs per region)
iii. The size of those SMEs (for example, by number of employees)
iv. The primary business function of SMEs.

Specific research **objectives** for Stage One were as follows:

1. To determine the numbers of and distribution of SMEs within the UK economy.

2. To understand the **regional breakdown of SMEs per sector** across the UK (including the English regions, plus Scotland, Wales and Northern Ireland).

3. To determine the number of SMEs in each sector by employee size band (e.g. 1-9; 10-49; etc)
    a. To understand the regional distribution of different size-bands of SME by sector (as far as is possible from the available data)

4. Within each sector, to detail the primary business function of SMEs in the UK economy i.e. to identify the nature of the manufacturing and service activities in which SMEs are engaged

5. To note any other significant features of the UK SME landscape that can be discerned via desk research (e.g. identifying sectors in which numbers of SMEs appear to be growing; any notable changes in the SME landscape within different sectors over recent years)

6. Whilst analysing the SME landscape across the UK economy as a whole, to focus in **particular depth** on the aerospace, healthcare, construction, automotive, food and ICT sectors.

1.3.2 Stage Two objectives

Further research objectives pertain specifically to Stage Two, which will report upon:

i. The main challenges faced by SMEs in the aerospace, healthcare, construction, automotive, food and ICT sectors.
ii. Any challenges that SMEs in these sectors face in using standards.
iii. Any challenges that they face in participating in standards development
iv. And will provide feedback on the requirements that SMEs in these sectors require BSI to meet.

The objectives for Stage Two will be as follows:

7. To understand the **main challenges** that SMEs in aerospace, healthcare, construction, automotive, food and ICT face in their industries
    a. To identify what the core challenges are perceived to be, as businesses develop, including with reference to impacts upon profitability, innovation and competitiveness in both domestic and overseas markets.
    b. To understand the issues that pose the **greatest challenges** for SMEs.

8. To identify the types of and specific **standards that are currently used by or are perceived as relevant by SMEs** in each sector (including technical standards, codes of practice etc.).

9. To understand in each sector **the challenges that SMEs face in using standards**
    a. To explore SMEs' **current and past experience** of using or attempting to use standards
        i. The standards concerned
        ii. Positive and negative aspects of the experience (costs, benefits, impacts upon the business)
        iii. Perceptions that resulted – of standards and of standards bodies such as BSI

b. To identify any **barriers to adoption** of standards or particular types of standards in each of the sectors researched
c. To identify any **sectors** where SMEs face particularly significant challenges in the use of standards, and to understand the reasons for this.

10. To identify any **challenges that SMEs face in participating** in standards development
    a. To understand the **issues that arise** for SMEs when considering whether to take part and when taking part in the development of standards
    b. To clarify **perceptions of what involvement would mean** – and the impact that this has upon willingness to engage with BSI
    c. To explore **past experiences** of involvement, including positive and negative aspects and the perceptions that have resulted.

11. To understand what SMEs in these sectors **require from BSI in the future** and how this may differ according to the characteristics of the SMEs (e.g. by sector). This might include, for example,:
    a. Helping SMEs to understand the role of standards, how to work with standards or how to become involved in developing standards
    b. Making standards more accessible by SMEs
    c. Adapting processes for standards development and for communications in order to maximise SME involvement and buy-in.

    These issues are presented as indicative of the areas that we would expect to explore, within a broad discussion about ways in which BSI could better work with/support SMEs.

12. To highlight the **implications that arise for standards development and use** by SMEs in each sector, including to differentiate between issues that are sector-specific and those that have cross-sector implications.

13. To provide **baseline quantitative data** and **an appropriate methodology that enables the research to be replicated** in the future and meaningful comparisons to be obtained; in particular to enable change and progress to be measured at sector level.

The current document does not address these objectives, which will be met via 48 depth interviews with SMEs across the six sectors, and a telephone survey of some 600 SMEs. The results of that research will be reported to BSI, separately, in May 2014.

2 Methodology

2.1 Overview

The Stage One research involved a desk-based study. No interviews were undertaken.

2.2 Quantitative analysis of the SME landscape

2.2.1 Statistical sources

Two key sets of statistical sources were used within the research:

- ONS datasets on UK Business Activity, Size and Location, published annually, in October, as a snapshot of the Inter Departmental Business Register (IDBR).[5]
- Business Population Estimates, published annually in October by BIS.[6]

In both cases, comparable data for the years 2011, 2012 and 2013 was obtained.

In terms of their usefulness in addressing the research objectives, both sets of data offer strengths and limitations. The ONS data, for example, is considerably richer and more in-depth than that from BIS: it provides a breakdown of enterprises at the UK level by both four-digit SIC class (e.g. '0111') and employee size band (allowing non-SMEs to be stripped out of the data), and at the regional level by two-digit SIC division (e.g. '01').

The highest level of granularity of the BIS data, in contrast, is for three-digit SIC groups (e.g. '011'), and only covers employers, meaning that the bulk of (non-

[5] http://www.ons.gov.uk/ons/taxonomy/index.html?nscl=Businesses+by+Size.

[6] https://www.gov.uk/government/collections/business-population-estimates.

employing) enterprises are missed out. If statistics relating to *all* enterprises by employee size band are required, the BIS data offers a breakdown by two-digit SIC division at the UK level and by one-digit SIC section (e.g. 'A') by region.

The advantage of the BIS data, however, is that it covers a much larger business population than the ONS data, and hence gives a more accurate – if less fine-grained – picture of the total *number* of SMEs in the UK economy. Where the ONS data is drawn solely from the IDBR – which contains all registered businesses operating VAT and/or PAYE schemes – the BIS Business Population Estimates take the IDBR data but then supplements it with an estimate of the number of very small, unregistered UK businesses in order to estimate the *total* business population for the UK.

In summary, the principle adopted in the research has been to use ONS data where there is a need to map statistics on business population against BSI's six specified sectors, and to understand the primary business functions within those sectors; and to use BIS data where an understanding of the total business population is more important than a detailed breakdown by sector. Whichever source is used is clearly stated throughout the report.

The analysis process, including the procedure for mapping the six specified sectors to their corresponding SIC codes, is discussed in section 2.2.2, below.

2.2.2 Analysis

Though there are some one-digit SIC sections and two-digit SIC divisions that appear, on the face of it, to correspond neatly to BSI's six sectors of focus (e.g. section F and divisions 41/43, which are usually labelled as 'Construction'), the reality is that the composition of most sectors is more complex.

The construction sector, for example, can be seen to embrace certain four-digit SIC classes from sections B (Mining & quarrying), C (Manufacturing), G (Wholesale and retail trade), M (Professional, scientific and technical activities) and N (Administrative and support service activities), as well as the core activities under section F.

Prior to data analysis taking place, each of the six sectors of focus was therefore mapped on to the 650 four-digit SIC classes, drawing, wherever possible, from classifications used by key industry reports and organisations within those sectors. When used in relation to the ONS data, this new framework therefore gives a much more accurate picture of the extent of each sector. Four-digit SIC classes that relate only *partially* to a particular sector have typically been excluded from the sector analysis, to avoid overstating sector size; where this has taken place it is noted.

Similarly, the report makes clear where data has been analysed at the one-digit SIC section or two-digit SIC division level.

A full list of the four-digit SIC classes corresponding to each of the six sectors is provided in the Appendix to this report.

2.3 Qualitative analysis of six key sectors

2.3.1 Rationale

Subsequent to an analysis of the UK SME landscape as a whole, the research focused in more depth on the six sectors specified (aerospace, automotive, construction, food, healthcare and ICT). This was in order to highlight the wider issues and evolution of the six sectors, to contextualise statistical data, and to report upon wider issues within each sector (e.g. SME engagement with global manufacturers and markets).

2.3.2 Qualitative sources

Research focused on industry and government reports, supplemented by sector-specific online news sources.

Key sources included:

Aerospace

- ADS Group (2013), *UK Aerospace Survey 2012*
- Aerospace Growth Partnership (2012), *Lifting Off: Implementing the Strategic Vision for UK Aerospace*

- KPMG (2012), *The Future of Civil Aerospace: A Study on the Outlook for the UK Civil Aerospace Manufacturing Sector*
- UK Commission for Employment and Skills (2013), *Technology and Skills in the Aerospace and Automotive Industries*

Automotive

- HM Government and Automotive Council UK (2013), *Driving Success: A Strategy for Growth and Sustainability in the UK Automotive Sector*
- SMMT (2012), *Capturing Opportunity: An Assessment of Supply Chain Opportunities in the Automotive Sector*
- Automotive Council UK (2011), *Growing the Automotive Supply Chain: The Way Forward*
- CBI (2013), *Full Steam Ahead: An Industrial Strategy for the UK Automotive Sector*

Construction

- Department of Business, Innovation and Skills (2013), *UK Construction: An Economic Analysis of the Sector*
- Department for Business, Innovation and Skills (2013), *Supply Chain Analysis in the Construction Industry: A Report for the Construction Industrial Strategy*
- HM Government (2013), *Construction 2025*
- Federation of Master Builders (2012), *Improving Public Procurement for Construction SMEs*

Food

- Grant Thornton (2011), *Sustainable Growth in the Food and Drink Manufacturing Industry*
- Food and Drink Federation (2012), *FDF Annual Review 2012*
- Arthur D. Little (2013), *Mapping Current Innovation and Emerging R&D Needs in the Food and Drink Industry required for Sustainable Economic Growth*
- HM Government (2012), *Driving Export Growth in the Farming, Food and Drink Sector: A Plan of Action 2012*

Healthcare

- Association of British Healthcare Industries (2013), *ABHI Annual Report 2012-13*
- HM Government (2012), *Strength and Opportunity 2012: The Landscape of the Medical Technology, Medical Biotechnology, Industrial Biotechnology and Pharmaceutical Sectors in the UK*
- Council for Science and Technology (2011), *The NHS as a Driver for Growth: A report by the Prime Minister's Council for Science and Technology*
- Quotec (2010), *Commercialising Medical Devices: A Guide for UK Based Small Companies*

ICT

- National Institute of Economic and Social Research (2013), *Measuring the UK's Digital Economy with Big Data*
- Max Nathan, Emma Vandore and Rob Whitehead (2012), *A Tale of Tech City: The Future of Inner East London's Digital Economy: Report for Centre for London*
- HM Government (2013), *Information Economy Strategy*

3 SMEs in the UK Economy

3.1 Overview

This chapter presents a macro-level analysis of the UK landscape for SMEs and covers the following topics:

- Definition of SMEs
- An overview of SME statistics for the UK economy.

3.2 Definitions

The current EU definition of an SME (established 2003) is as follows:

Table 1: EU definition of SMEs

Company category	Employees	Turnover	OR	Balance sheet total
Medium-sized	<250	<€50mn		<€43mn
Small	<50	<€10mn		<€10mn
Micro	<10	<€2mn		<€2mn

In addition, a series of other conditions must be fulfilled, most notably that an enterprise must not have relationships with other enterprises that mean that together these enterprises exceed the ceilings.[7] In 2012 the EU recognised that the limits for turnover and balance sheet total will eventually be revised upwards to account for inflation, labour productivity and changes in the ratio of turnover to balance sheet total, but these changes are not urgent.[8]

[7] Centre for Strategy and Evaluation Services (2012), 'Evaluation of the SME Definition: Executive Summary,' p.3. http://ec.europa.eu/enterprise/policies/sme/files/studies/executive-summary-evaluation-sme-definition_en.pdf

[8] http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/

The Centre for Strategy and Evaluation Services, in its 2012 evaluation of the EU SME definition, noted that although employee size data was available for most of the EU area, data that combined employee and balance sheet and/or turnover data at a granular level was considerably less developed. This made assessment of the number of SMEs in the EU according to the three defining criteria difficult.[9]

3.3 UK SME economy at a glance

3.3.1 Overview

Data from the Federation of Small Businesses (drawn from the same BIS BPE data that was analysed by Marketwise Strategies for the current report) indicated that, at the start of 2013:

- There were an estimated 4.9 million businesses in the UK. Together these employed 24.3 million people and had a combined turnover of £3,300 billion.

- Of the 4.9mn businesses in the UK, **SMEs** accounted for:
  - 99.9 per cent of all private sector businesses,
  - 59.3 per cent of private sector employment,
  - 48.1 per cent of private sector turnover,
  - 14.4 million employees (small businesses alone accounted for 47 per cent of private sector employment and 33.1 per cent of turnover),
  - A combined turnover of £1,600 billion

- Of all businesses:
  - 62.6 per cent (3.7 million) were sole proprietorships,
  - 28.5 per cent (1.4 million) were companies
  - 8.9 per cent (434,000) were partnerships

The distribution of SME employment is uneven across different sectors of the economy:

[9] Centre for Strategy and Evaluation Services (2012), 'Evaluation of the SME Definition: Executive Summary,' p.4. http://ec.europa.eu/enterprise/policies/sme/files/studies/executive-summary-evaluation-sme-definition_en.pdf

- In the financial and insurance sector, only 27.5 per cent of employment was in SMEs.
- However, in the agriculture, forestry and fishing sector virtually all employment (95.4 per cent) was in SMEs.
- The highest number of individual businesses was in the Construction sector (891,000 businesses, accounting for nearly a fifth of all businesses); over 99% of Construction companies are SMEs.
- London had more firms than any other region in the UK (841,000 private sector businesses). The South East had the second largest number with 791,000. Together these regions accounted for almost a third of all firms in the UK economy.[10]

3.3.2 Number of UK SMEs

As noted earlier, the **Business Population Estimates (BPEs)**, published annually by BIS, provide the most accurate count of UK businesses, as they include an estimate of the number of **unregistered businesses** in each sector and region alongside the VAT- and PAYE-registered businesses that are already covered by the separate ONS Inter Departmental Business Register (IDBR).

The BPE data does not present *totals* for the **SME population** (i.e. all businesses with 0 to 249 employees), but those figures can be readily determined by aggregating the data for the relevant employee size bands (e.g. no employees, one employee, 2-4 employees, and so on).

The latest (2013) BPEs report that, as of March 2013, there were **4,895,655 private businesses** in the UK. Of these, the total number of SMEs is **4,872,690**, accounting for **99.5%** of all businesses in the UK. Hence, the number of large businesses in the UK – those with 250 or more employees – is 22,965.

The separate ONS data, again for March 2013, gives a figure of **2,158,665** for the number of **registered SMEs** in the UK, suggesting that the number of unregistered SMEs in the UK is in the region of 2.7 million.

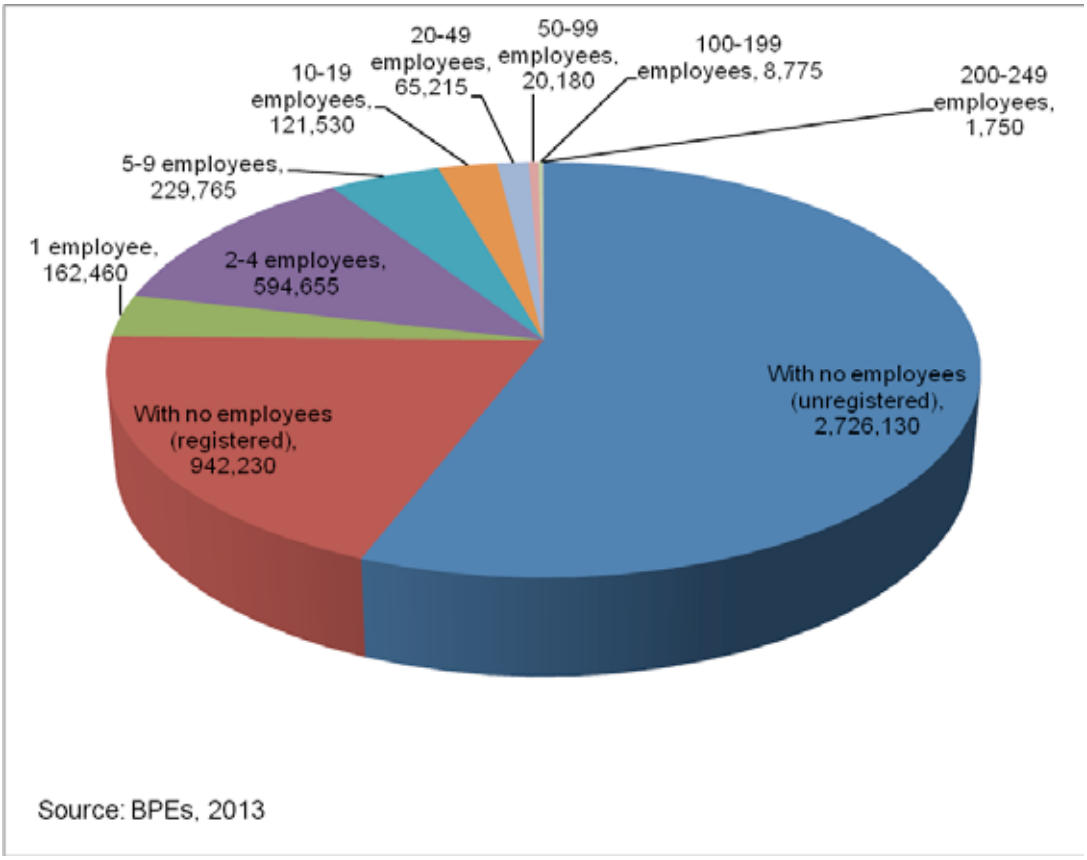
[10] http://www.fsb.org.uk/stats

3.3.3 Breakdown of UK SMEs by size band

Of the 4,872,690 UK SMEs, just over three-quarters (75.1%) are single-person businesses with **no employees**. The majority of these (55.9% of total SMEs) are also **unregistered**.

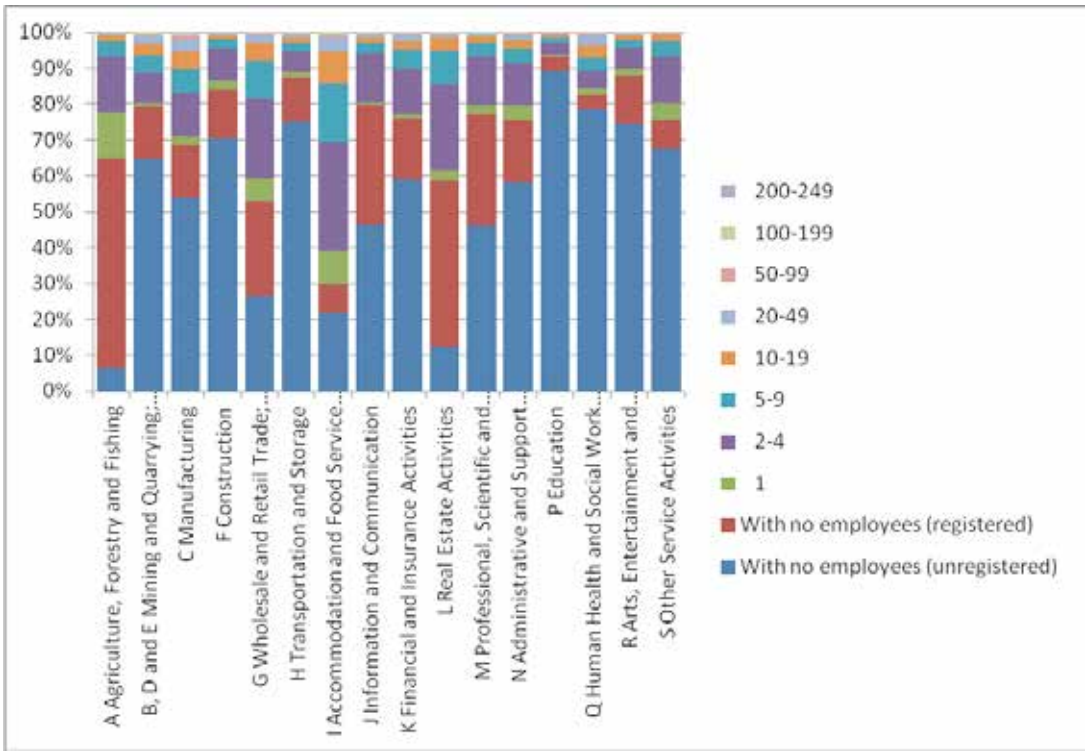
At the opposite end of the scale, there are only 1,750 UK SMEs that employ between 200 and 249 people, accounting for a fraction of a percent of the total (Figure 1).

Figure 1 Breakdown of UK SMEs by size band



The size distribution of SMEs varies widely between sectors, however. In almost all cases, the largest proportion of SMEs are unregistered businesses with no employees. In two sectors, however – Agriculture, Forestry and Fishing (A) and Real Estate Activities (L) – the largest number of SMEs are *registered* businesses with no employees, while in another (Accommodation and Food Service Activities; I), the largest number of SMEs have 2-4 employees (Figure 2).

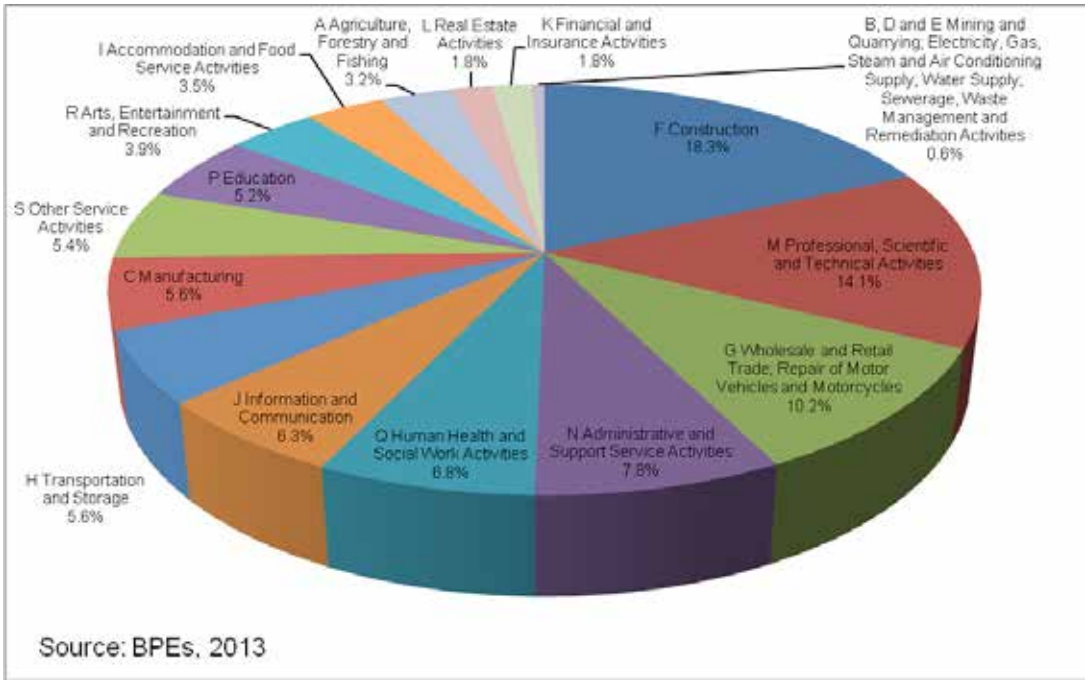
Figure 2 Distribution of SMEs by size band within each sector (SIC section)



3.3.4 Breakdown of UK SMEs by sector

Among the 4,872,690 SMEs in the UK, the largest sector (by SIC section) is 'Construction' (section F), which accounts for 18.3% of the total population (890,560 businesses), followed by 'Professional, Scientific and Technical Activities' (section M) and 'Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles' (section G) (Figure 3).

Figure 3 Breakdown of UK SMEs by sector (SIC section)



Of the six sectors of particular interest to BSI, three – Construction, Healthcare and ICT – appear to correspond to SIC sections F, Q and J respectively. It should be noted, however, that industry definitions of those sectors tend to embrace additional activities that fall within other SIC sections. Other sectors – such as Aerospace – straddle numerous SIC sections and divisions. For clarity, the correlations between SIC sections, SIC divisions and BSI's six sectors of focus are set out in Table 2: Mapping of SIC sections and divisions to sectors of focus.

Hence, analysis at the SIC section level is helpful in giving a broad view of the SME landscape, rather than a detailed insight into particular sectors; later in the report, analysis at the four-digit SIC class level (drawing from the more detailed but less comprehensive ONS data) is used to give a greater insight into those sectors of focus.

Table 2: Mapping of SIC sections and divisions to sectors of focus

SIC section (1-digit)		SIC division (2-digit)	Description of SIC division	Corresponding sectors of focus (highlighted in green)
A	Agriculture, Forestry and Fishing	01	Crop and animal production, hunting and related service activities	
		02	Forestry and logging	
		03	Fishing and aquaculture	
B	Mining and Quarrying	05	Mining of coal and lignite	
		06	Extraction of crude petroleum and natural gas	
		07	Mining of metal ores	
		08	Other mining and quarrying	Construction (part)
		09	Mining support service activities	Construction (part)
C	Manufacturing	10	Manufacture of food products	
		11	Manufacture of beverages	
		12	Manufacture of tobacco products	
		13	Manufacture of textiles	
		14	Manufacture of wearing apparel	
		15	Manufacture of leather and related products	
		16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	Construction (part)
		17	Manufacture of paper and paper products	
		18	Printing and reproduction of recorded media	
		19	Manufacture of coke and refined petroleum products	
		20	Manufacture of chemicals and chemical products	
		21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	Healthcare
		22	Manufacture of rubber and plastic products	Construction (part), Aerospace (part)
		23	Manufacture of other non-metallic mineral products	Construction (part)
		24	Manufacture of basic metals	
		25	Manufacture of fabricated metal products, except machinery and equipment	Construction (part), Aerospace (part)
		26	Manufacture of computer, electronic and optical products	Aerospace (part), Healthcare (part)
		27	Manufacture of electrical equipment	Construction (part)
		28	Manufacture of machinery and equipment n.e.c.	Construction (part)
		29	Manufacture of motor vehicles, trailers and semi-trailers	Automotive
		30	Manufacture of other transport equipment	Aerospace (part), Automotive (part)
		31	Manufacture of furniture	
		32	Other manufacturing	Healthcare (part)

SIC section (1-digit)		SIC division (2-digit)	Description of SIC division	Corresponding sectors of focus (highlighted in green)
		33	Repair and installation of machinery and equipment	Construction (part)
D	Electricity, gas, steam and air conditioning supply	35	Electricity, gas, steam and air conditioning supply	
E	Water supply, sewerage, waste management and remediation activities	36	Water collection, treatment and supply	
		37	Sewerage	
		38	Waste collection, treatment and disposal activities; materials recovery	
		39	Remediation activities and other waste management services.	
F	Construction	41	Construction of buildings	Construction
		42	Civil engineering	Construction, Aerospace (part)
		43	Specialised construction activities	Construction
G	Wholesale and retail trade; repair of motor vehicles and motorcycles	45	Wholesale and retail trade and repair of motor vehicles and motorcycles	Automotive
		46	Wholesale trade, except of motor vehicles and motorcycles	Construction (part), Food (part), Aerospace (part), Healthcare (part)
		47	Retail trade, except of motor vehicles and motorcycles	
H	Transportation and storage	49	Land transport and transport via pipelines	Aerospace (part)
		50	Water transport	
		51	Air transport	Aerospace (part)
		52	Warehousing and support activities for transportation	Aerospace (part)
		53	Postal and courier activities	
I	Accommodation and food service activities	55	Accommodation	
		56	Food and beverage service activities	Aerospace (part)
J	Information and communication	58	Publishing activities	ICT
		59	Motion picture, video and television programme production, sound recording and music publishing activities	ICT
		60	Programming and broadcasting activities	ICT
		61	Telecommunications	ICT
		62	Computer programming, consultancy and related activities	ICT
		63	Information service activities	ICT
K	Financial and insurance activities	64	Financial service activities, except insurance and pension funding	
		65	Insurance, reinsurance and pension funding, except compulsory social security	
		66	Activities auxiliary to financial services and insurance activities	
L	Real estate activities	68	Real estate activities	
M	Professional, scientific and technical activities	69	Legal and accounting activities	
		70	Activities of head offices; management consultancy activities	

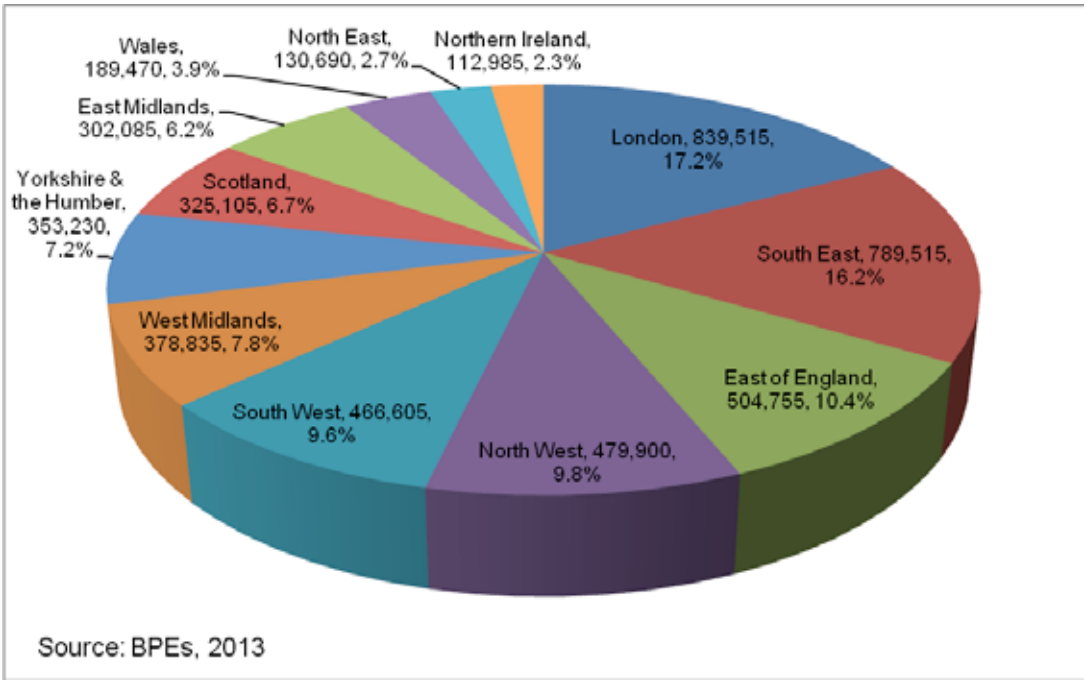
SIC section (1-digit)		SIC division (2-digit)	Description of SIC division	Corresponding sectors of focus (highlighted in green)
		71	Architectural and engineering activities; technical testing and analysis	Construction (part), Aerospace (part)
		72	Scientific research and development	
		73	Advertising and market research	
		74	Other professional, scientific and technical activities	74 Construction (part)
		75	Veterinary activities	
N	Administrative and support service activities	77	Rental and leasing activities	Construction (part), Aerospace (part)
		78	Employment activities	
		79	Travel agency, tour operator and other reservation service and related activities	
		80	Security and investigation activities	
		81	Services to buildings and landscape activities	
		82	Office administrative, office support and other business support activities	
O	Public administration and defence; compulsory social security	84	Public administration and defence; compulsory social security	
P	Education	85	Education	
Q	Human health and social work activities	86	Human health activities	Healthcare
		87	Residential care activities	Healthcare
		88	Social work activities without accommodation	Healthcare
R	Arts, entertainment and recreation	90	Creative, arts and entertainment activities	
		91	Libraries, archives, museums and other cultural activities	
		92	Gambling and betting activities	
		93	Sports activities and amusement and recreation activities	
S	Other service activities	94	Activities of membership organisations	
		95	Repair of computers and personal and household goods	
		96	Other personal service activities	
T	Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	97	Activities of households as employers of domestic personnel	
		98	Undifferentiated goods- and services-producing activities of private households for own use	
U	Activities of extraterritorial organisations and bodies	99	Activities of extraterritorial organisations and bodies	

3.4 SME economy by sector and region

3.4.1 Regional breakdown of SMEs by sector

Looking at the distribution of the 4,872,690 SMEs across the UK highlights that the largest proportion – 17.2%, or 839,515 businesses – are in London, with the South East (16.2%; 789,515 businesses) closely behind (Figure 4). Given that these are also the UK's most populous regions[11], the large number of SMEs here is not entirely surprising.

Figure 4 Distribution of UK SMEs by region



Breaking down the data for each **sector** (SIC section) by **region** (see Table 3: Numbers of SMEs per sector per region) highlights the following trends.

A: Agriculture, Forestry and Fishing:

- The **South West** has the UK's greatest concentration of SMEs in 'Agriculture, Forestry and Fishing' (SIC section A), accounting for 16.1% of the UK SMEs in that sector.

[11] See http://www.ons.gov.uk/ons/rel/regional-trends/region-and-country-profiles/region-and-country-profiles---key-statistics-and-profiles--october-2013/regional-profiles---key-statistics--october-2013.xls.

- Separate ONS data (for registered SMEs only) indicates that within SIC section A, the vast majority of businesses in both the UK and the South West fall within division 01 ('Crop and animal production, hunting and related service activities'), though **Scotland** accounts for over a quarter of registered SMEs in 'Forestry and logging' (division 02) and almost half of those in 'Fishing and aquaculture' (03).

B: Mining and Quarrying, etc:

- The greatest number of SMEs in SIC sections B, D and E ('Mining and Quarrying; Electricity, Gas, Steam and Air Conditioning Supply; Water Supply; Sewerage, Waste Management and Remediation Activities') are in the **North West** (15.8%) and the **East of England** (14.2%).

- ONS' data for registered SMEs suggests that the dominant SIC divisions within these SIC sections are 'Waste collection, treatment and disposal activities; materials recovery' (38) and 'Electricity, gas, steam and air conditioning supply' (35).

C: Manufacturing:

- Manufacturing SMEs (SIC section C) have the greatest presence in the **South East** (13.7%) and **North West** (11.9%).

- Within SIC section C, 24 divisions – each representing a different area of manufacturing – are represented, and the ONS data for registered SMEs gives an indication of different regions' strengths. Notably:
    - For SIC division 21, ('Manufacture of basic pharmaceutical products and pharmaceutical preparations'), which can be considered part of the Healthcare sector, a fifth of registered SMEs are in **London**.
    - 1 in 6 registered SMEs in division 29 ('Manufacture of motor vehicles, trailers and semi-trailers', and part of the Automotive sector) are in the **West Midlands**.

F: Construction:

- The biggest concentrations of SMEs in 'Construction' (SIC section F) are in the **South East** (15.7%) and **London** (14.1%).

- ONS data for registered SMEs indicates that London has a particular focus of SMEs engaged in the 'Construction of buildings' (SIC division 41), with 17.5% of the UK total. However, the **South East** and **East of England** have the highest numbers of registered SMEs in 'Civil engineering' (division 42) and 'Specialised construction activities' (division 43).

G: Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles:

- SMEs in the 'Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles' (SIC section G) are most numerous in **London** (14.9%) and the **South East** (14.1%).

H: Transportation and Storage:

- After London (17.1%), the largest number of 'Transportation and Storage' (SIC section H) SMEs are in the **North West**.

- Within SIC section H, ONS data indicates that **London** and the **South East** account for nearly half of all registered SMEs working in 'Air transport' (SIC division 51).

I: Accommodation and Food Service Activities:

- SMEs working in 'Accommodation and Food Service Activities' (SIC section I) are most numerous in **London** (14.2%), the **South East** (12.0%) and the **North West** (11.6%).

- ONS data shows that while **London** and the **South East** have the highest concentration of registered SMEs in 'Food and beverage service activities' (SIC division 56), registered SMEs in 'Accommodation' (division 55) are most prominent in **Scotland** and the **South West** (16.7% each of the UK total).

J: Information and Communication:

- Of all the SIC sections, 'Information and Communication' (J) SMEs are among the most concentrated in one part of the country. 27.4% of SMEs are in **London**, with a further 19.3% in the **South East**.

- Among registered SMEs, ONS data suggests that some business activities are even more focused on **London**, including 'Motion picture, video and television programme production, sound recording and music publishing activities' (SIC division 59; 52.9% based in London) and 'Programming and broadcasting activities' (division 60; 40.6% in London).

K: Financial and Insurance Activities:

- There is a strong south of England focus for 'Financial and Insurance Activities' SMEs (SIC section K), with 27.5% based in **London**, 19.4% in the **South East**, and 14.8% in the **East of England**.

- ONS data for registered SMEs reveals some regional variation in distribution by business activity, however. Though **London** has the most registered SMEs in 'Financial service activities, except insurance and pension funding' (SIC division 64; 36.8%), the **North West** dominates in 'Insurance, reinsurance and pension funding, except compulsory social security' (division 65; 18.7%).

L: Real Estate Activities:

- 'Real Estate Activities' SMEs (SIC section L) have the highest representation in **London** (23.3%), the **South East** (16.2%) and the **South West** (8.7%).

- SIC section L only comprises one SIC division (68), so the ONS data offers no additional insight at the regional level.

M: Professional, Scientific and Technical Activities:

- SMEs in 'Professional, Scientific and Technical Activities' (SIC section M) are most concentrated in **London** (21.5%), the **South East** (20.5%) and the **East of England** (10.4%).

- Among the registered SMEs in the ONS data, activities particularly concentrated in **London** are 'Advertising and market research' (SIC division 73; 32.3%) and 'Legal and accounting activities' (division 69; 31.5%).

N: Administrative and Support Service Activities:

- 'Administrative and Support Service Activities' SMEs (SIC section N) are most numerous in **London** (18.8%), the **South East** (16.6%) and the **East of England** (10.9%).

- Among registered SMEs within the ONS data, 'Travel agency, tour operator and other reservation service and related activities' (SIC division 79) are especially concentrated in **London** (30.6% of this division's registered SMEs).

P: Education:

- 'Education' SMEs (SIC section P) are concentrated in the **South East** (18.8%) and **London** (18.4%).

- SIC section P only includes one SIC division (85), so the ONS data provides no additional insight at the regional level.

Q: Human Health and Social Work Activities:

- SMEs in 'Human Health and Social Work Activities' (SIC section Q) – comprising a large part of the Healthcare sector – are most numerous in **London** (17.3%), the **South East** (16.6%) and the **North West** (11.5%).

- Within this SIC section, ONS data suggests that **London** and the **South East** have the highest number of registered SMEs in all three divisions (86 'Human health activities', 87 'Residential care activities' and 88 'Social work activities without accommodation', though the **South West** is also strong (12.0% of the division's registered SMEs) in 'Residential care activities'.

R: Arts, Entertainment and Recreation:

- Of all the SIC sections, 'Arts, Entertainment and Recreation' (R) is the one that has the greatest proportion of SMEs in a single region (27.6% of the total, in **London**).

- ONS data suggests that **London's** dominance is especially marked in 'Creative, arts and entertainment activities' (SIC division 90), where it accounts for 43.6% of registered SMEs. However, in the other sizable

division within section R – ‘Sports activities and amusement and recreation activities’ (division 93) – the **South East** leads, with 17.3% of the UK’s registered SMEs.

S: Other Service Activities:

- SMEs engaged in ‘Other Service Activities’ (SIC section S) are most numerous in the **South East** (16.2%), **London** (12.6%) and the **East of England**.

3.4.2 Regional breakdown of SMEs by sector and size band

The breakdown of SME data by *three* variables – sector, size band and region – inevitably means that the numbers involved are sometimes very small.

Tables showing the proportion of SMEs within each size band, for each region and sector, are included in the Appendix. A table showing the percentages for the UK as a whole is included for comparison.

Table 3: Numbers of SMEs per sector per region

SIC section	North East	North West	Yorkshire & the Humber	East Midlands	West Midlands	East of England	London	South East	South West	Wales	Scotland	Northern Ireland	Total	% of Total
A Agriculture, Forestry and Fishing	4,135	11,840	11,985	11,495	12,775	12,575	585	12,085	24,760	14,840	18,320	18,175	**153,570**	**3.2%**
B, D and E Mining and Quarrying; Electricity, Gas, Steam and Air Conditioning Supply, etc.	955	4,445	1,545	1,465	1,065	3,980	3,735	2,880	2,595	1,050	3,160	1,185	**28,060**	**0.6%**
C Manufacturing	9,435	32,555	22,495	23,215	29,650	30,690	26,750	37,470	29,060	11,800	13,910	6,060	**273,090**	**5.6%**
F Construction	24,145	94,730	71,365	60,315	73,030	100,225	125,860	139,435	94,765	33,285	52,800	20,605	**890,560**	**18.3%**
G Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	15,925	53,650	41,840	31,850	43,130	50,190	73,885	69,800	43,750	20,235	34,235	16,865	**495,355**	**10.2%**
H Transportation and Storage	10,465	34,440	21,320	20,140	26,615	26,730	46,720	33,325	20,220	7,465	22,010	5,490	**274,940**	**5.6%**
I Accommodation and Food Service Activities	7,785	19,580	15,735	12,795	10,975	14,630	23,990	20,200	14,725	8,150	15,105	5,195	**168,865**	**3.5%**
J Information and Communication	9,595	18,030	18,630	13,225	19,795	29,510	83,735	59,060	21,825	7,590	20,380	3,900	**305,275**	**6.3%**
K Financial and Insurance Activities	430	5,525	6,895	1,105	4,965	12,690	23,560	16,605	5,690	1,640	4,330	2,310	**85,745**	**1.8%**

SIC section	North East	North West	Yorkshire & the Humber	East Midlands	West Midlands	East of England	London	South East	South West	Wales	Scotland	Northern Ireland	Total	% of Total
L Real Estate Activities	1,930	8,600	5,480	5,055	6,345	7,245	20,635	14,335	7,760	3,240	6,345	1,770	**88,740**	**1.8%**
M Professional, Scientific and Technical Activities	16,365	59,670	36,840	38,405	40,730	71,115	147,825	140,820	56,875	19,255	49,850	8,510	**686,260**	**14.1%**
N Administrative and Support Service Activities	8,790	36,310	26,525	25,045	31,845	41,335	71,280	62,895	37,195	12,470	20,770	4,275	**378,735**	**7.8%**
P Education	5,895	19,855	16,965	16,535	20,990	27,725	47,040	48,130	25,790	11,195	13,690	1,950	**255,760**	**5.2%**
Q Human Health and Social Work Activities	8,150	38,165	23,440	19,340	26,320	28,880	57,730	55,170	34,225	11,135	20,380	10,005	**332,940**	**6.8%**
R Arts, Entertainment and Recreation	620	13,885	10,430	1,345	11,260	18,035	53,015	32,830	21,000	12,450	14,475	2,680	**192,025**	**3.9%**
S Other Service Activities	6,070	28,620	21,740	20,755	19,345	29,200	33,170	44,475	26,370	13,670	15,345	4,010	**262,770**	**5.4%**
Total	**130,690**	**479,900**	**353,230**	**302,085**	**378,835**	**504,755**	**839,515**	**789,515**	**466,605**	**189,470**	**325,105**	**112,985**		
% of Total	**2.7%**	**9.8%**	**7.2%**	**6.2%**	**7.8%**	**10.4%**	**17.2%**	**16.2%**	**9.6%**	**3.9%**	**6.7%**	**2.3%**		

4 Aerospace

4.1 Definition, sector size and statistical trends

The Aerospace sector comprises five four-digit SIC classes in their entirety, and a further 11 classes that potentially include aerospace-related activities alongside others.

ONS data indicates that the number of registered SMEs within each of those classes for the years 2011-13 was as follows (listed in descending order according to the number of SMEs in 2013):

SIC Class	Industry	Description[12]	No. of SMEs (2011)	No. of SMEs (2012)	No. of SMEs (2013)	Change 2011-13 (%)
5223	Aerospace	52230 Service activities incidental to air transportation	755	705	700	-7.3%
5110	Aerospace	51101 Scheduled passenger air transport; and 51102 Non-scheduled passenger air transport	655	640	620	-5.3%
3030	Aerospace	30300 Manufacture of air and spacecraft and related machinery	420	500	530	26.2%
5121	Aerospace	51210 Freight air transport	290	280	275	-5.2%
7735	Aerospace	77351 Renting and leasing of air passenger transport equipment	240	235	250	4.2%
4669	Aerospace (part)	46690 Wholesale of other machinery and equipment	7,635	7,745	7,895	3.4%
7120	Aerospace (part)	71200 Technical testing and analysis	3,895	4,085	4,205	8.0%
5229	Aerospace (part)	52290 Other transportation support activities	3,495	3,435	3,505	0.3%
4939	Aerospace (part)	49390 Other passenger land transport	3,075	2,985	2,915	-5.2%

[12] As listed at from http://www.companieshouse.gov.uk/infoAndGuide/sic/sic2007.shtml.

SIC Class	Industry	Description[12]	No. of SMEs (2011)	No. of SMEs (2012)	No. of SMEs (2013)	Change 2011-13 (%)
2229	Aerospace (part)	22290 Manufacture of other plastic products	2,565	2,560	2,545	-0.8%
4211	Aerospace (part) & Construction	42110 Construction of roads and motorways	2,480	2,425	2,455	-1.0%
2651	Aerospace (part)	26511 Manufacture of electronic measuring, testing etc. equipment, not for industrial process control; and 26513 Manufacture of non-electronic measuring, testing etc. equipment, not for industrial process control[13]	2,040	1,950	1,925	-5.6%
5629	Aerospace (part)	56290 Other food services	1,325	1,705	1,900	43.4%
2899	Aerospace (part)	28990 Manufacture of other special-purpose machinery n.e.c.	435	460	460	5.7%
5224	Aerospace (part)	52242 Cargo handling for air transport activities[14]	310	355	365	17.7%
2540	Aerospace (part)	25400 Manufacture of weapons and ammunition	115	120	110	-4.3%
		Total (exclusively Aerospace)	**2,360**	**2,360**	**2,375**	**0.6%**
		Total (all – including part Aerospace)	**29,730**	**30,185**	**30,665**	**3.1%**

Of the six sectors of focus, Aerospace is by some distance the smallest: its 2,375 companies (as of 2013) comprise 0.1% of the UK's registered SMEs. Nevertheless, the total number of SMEs in the sector has grown by 0.6% between 2011 and 2013.

- Service activities incidental to air transportation (SIC 5223) consistently accounts for the largest number of SMEs within the sector,
- Manufacture of air and spacecraft and related machinery (3030) is the area that has seen greatest growth, with the number of SMEs increasing 26% between 2011 and 2013.

[13] Totals for this SIC class include 26512 and 26514, which are not Aerospace related.

[14] Totals for this SIC class include 52241 and 52243, which are not Aerospace related.

If the further 11 SIC classes that potentially include aerospace-related activities are counted, then the total number of SMEs expands considerably to 30,665; however, it is clear that many of the activities within these classes will not be aerospace related; for example, though 4211 includes runway construction within its definition, this is likely to be a small part of the activities taking place within that particular class.

Aerospace SMEs are found across all regions of the UK, although the South West, North West and East Midlands have the highest numbers of aerospace employees in the country.[15]

4.2 Overview

4.2.1 Overall sector picture

The aerospace sector is one of the most successful manufacturing sectors in the UK economy. It has a 17% global market share of aerospace industry revenues, making the UK's civil aerospace industry is the largest in Europe and second largest in the world.[16] Although the aerospace sector was impacted by the 2008 economic contraction, this impact was relatively short and minor compared with some other sectors of the UK economy, and the sector grew 15.8% in 2011.[17]

- The industry contributes around £11.4 billion to the UK's GDP. UK aerospace revenue was £24.2 billion in 2011, a real terms increase of 2.5% compared with 2010. Three-quarters of this revenue is generated by export sales.[18]
- Collectively, the sector provides over 100,000 direct jobs and indirectly supports many more[19] (*The Manufacturer* has reported that as many as 230,000 jobs in the UK are either directly within, or in some way dependent upon, the aerospace sector).[20]

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[15] House of Commons Library, 'The Aerospace Industry,' November 20th 2012, p.4.

[16] KPMG (2013), 'The Future of Civil Aerospace: A Study on the Outlook for the UK Civil Aerospace Manufacturing Sector.' See http://www.kpmg.com/uk/en/issuesandinsights/articlespublications/newsreleases/pages/kpmg-report-outlines-the-future-of-the-uk-civil-aerospace-industry.aspx

[17] House of Commons Library, 'The Aerospace Industry,' November 20th 2012, p.4.

[18] ADS (2012), UK Aerospace Survey 2012, p.6. https://www.adsgroup.org.uk/pages/35926020.asp

[19] https://www.adsgroup.org.uk/pages/62968081.asp

[20] http://www.themanufacturer.com/articles/pm-throws-support-behind-uk-aerospace-at-dubai-airshow/

The UK aerospace sector is conventionally divided into two key sub-sectors:

- Civil aerospace
- Defence aerospace

Civil aerospace is growing considerably faster at present than its defence equivalent.

4.2.2 Civil aerospace

According to the UK Aerospace Survey:

- Civil aerospace revenues grew by 5.1% in 2012.[21] This is expected to accelerate in the next two to three years as a result of growing international orders for both the A380 and Boeing 737MAX aircraft, particularly in developing markets.
- This growth is set to rise to 6.8% per year on the back of rising global demand.[22] The Aerospace Growth Partnership expects that nearly 27,000 new large civil airliners (with a market value of $3.2 trillion) will be needed by 2030; by 2020 it expects a global market for around 9,500 civil helicopters (worth around $50bn).[23]
- Employees in the civil aerospace sector tend to have higher qualifications than other sectors as well as earning 34.4% more than the UK average.[24]
- Global exports account for 75% of its revenue.[25]

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[21] ADS (2012), UK Aerospace Survey 2012, p.6. https://www.adsgroup.org.uk/pages/35926020.asp

[22] KPMG (2013), 'The Future of Civil Aerospace: A Study on the Outlook for the UK Civil Aerospace Manufacturing Sector.' See http://www.kpmg.com/uk/en/issuesandinsights/articlespublications/newsreleases/pages/kpmg-report-outlines-the-future-of-the-uk-civil-aerospace-industry.aspx

[23] Aerospace Growth Partnership (2013), 'Reach for the Skies: A Strategic Vision for UK Aerospace,' p.3. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/31807/12-954-reach-skies-strategic-vision-uk-aerospace.pdf

[24] KPMG (2013), 'The Future of Civil Aerospace: A Study on the Outlook for the UK Civil Aerospace Manufacturing Sector.' See http://www.kpmg.com/uk/en/issuesandinsights/articlespublications/newsreleases/pages/kpmg-report-outlines-the-future-of-the-uk-civil-aerospace-industry.aspx

[25] KPMG (2013), 'The Future of Civil Aerospace: A Study on the Outlook for the UK Civil Aerospace Manufacturing Sector.' See http://www.kpmg.com/uk/en/issuesandinsights/articlespublications/newsreleases/pages/kpmg-report-outlines-the-future-of-the-uk-civil-aerospace-industry.aspx

KPMG research has indicated a high level of optimism among companies in civil aerospace regarding future growth prospects.[26]

The strengths of UK civil aerospace are as follows:

- **Expertise in (and export of) innovative, high-value technologies**, particularly the development and production of four high-value areas of modern aircraft:

    - wings (about half of the world's aircraft wings are manufactured in the UK)[27];
    - engines;
    - aero structures;
    - advanced systems.[28]

    Aerospace services, including maintenance, repair and overhaul, and data management are another key capability, along with the UK's particular strength in high-tech research and development.[29]

According to research completed by KPMG in 2013, other strengths are that t**he sector has a strong and 'joined up' industrial strategy**, which renders the UK an attractive location for new international investment in civil aerospace.[30]

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[26] KPMG (2013), 'The Future of Civil Aerospace: A Study on the Outlook for the UK Civil Aerospace Manufacturing Sector.' See http://www.kpmg.com/uk/en/issuesandinsights/articlespublications/newsreleases/pages/kpmg-report-outlines-the-future-of-the-uk-civil-aerospace-industry.aspx

[27] Aerospace Growth Partnership (2013), 'Reach for the Skies: A Strategic Vision for UK Aerospace,' p.3. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/31807/12-954-reach-skies-strategic-vision-uk-aerospace.pdf

[28] UKCES (2013), 'Technology and Skills in the Aerospace and Automotive Industries,' p.3. The Aerospace Growth Partnership contends that the UK aerospace sector has particular strengths in the following areas: Advanced wing design, integration and manufacture; Advanced aero-engines; Helicopters; Advanced power trains; Landing gear systems; Aircraft and engine control systems; Electrical power systems; Wheels and brakes; Advanced propeller systems; Advanced rotor blade design; Avionics. Aerospace Growth Partnership (2012), 'Reach for the Skies: A Strategic Vision for UK Aerospace, p.11. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/31807/12-954-reach-skies-strategic-vision-uk-aerospace.pdf

[29] Aerospace Growth Partnership (2012), 'Reach for the Skies: A Strategic Vision for UK Aerospace, p.11. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/31807/12-954-reach-skies-strategic-vision-uk-aerospace.pdf

4.2.3 Defence aerospace

The defence aerospace sector has fared less well than the civil sub-sector in recent years as a result of austerity in public spending in the UK and elsewhere in the wake of the recent recession (e.g. while civil orders grew by 2.6% in 2011, defence orders reduced sharply by 12.4%).[31]

Defence aerospace markets in Europe (including the UK) are particularly weak at present, and the US market is also unclear because of the uncertainty of federal funding programmes. Export growth opportunities are found predominantly in the Middle East, Brazil, South East Asia and India.[32]

An article concerning aerospace in the House of Commons Library has indicated some concern that the 2012 Defence White Paper may lead to more contracts going overseas.[33]

4.3 Structure

The UK aerospace industry is structured as follows:

[30] KPMG (2013), 'The Future of Civil Aerospace: A Study on the Outlook for the UK Civil Aerospace Manufacturing Sector.' See http://www.kpmg.com/uk/en/issuesandinsights/articlespublications/newsreleases/pages/kpmg-report-outlines-the-future-of-the-uk-civil-aerospace-industry.aspx

[31] ADS (2012), UK Aerospace Survey 2012, p.6. https://www.adsgroup.org.uk/pages/35926020.asp

[32] ADS (2012), UK Aerospace Survey 2012, p.11. https://www.adsgroup.org.uk/pages/35926020.asp

[33] House of Commons Library, 'The Aerospace Industry,' November 20th 2012, p.4.

Table 4: Structure of UK aerospace sector

Category	Number of companies	Examples of Companies
OEMs (civil and defence)	6	Rolls-Royce; Airbus; Spirit; Bombardier; Augusta Westland; GKN
Tier 1	10-20	Marshall Aerospace; Eurocopter; Honeywell; GE Aviation; UTC Aerospace Systems; Cobham; Meggitt
Tier 2	100-200	Ultra Electronics; RLC Group; Firth Rixson; SAFRAN – Aircelle; Gardner Aerospace
Tiers 3 and 4	800+	SAFRAN – Messier Dowty; Aeromet; Avingtrans; Nasmyth; Bromford Industries

The sector's supply chain is described by KPMG as having a "long tail".[34]

4.4 Challenges

The most significant challenge facing the sector is that the next generation of aircraft will feature substantially different product and manufacturing technologies than those used today (i.e. the competitive advantage enjoyed by UK SMEs as leading edge producers of high-value component for aerospace may not apply to new technologies used in aerospace in the future).[35]

In particular, pressure from airlines to reduce operating costs, and the drive to reduce the environmental impact of the airline industry, means that the adoption of

[34] KPMG (2013), 'The Future of Civil Aerospace: A Study on the Outlook for the UK Civil Aerospace Manufacturing Sector.' See http://www.kpmg.com/uk/en/issuesandinsights/articlespublications/newsreleases/pages/kpmg-report-outlines-the-future-of-the-uk-civil-aerospace-industry.aspx

[35] Aerospace Growth Partnership (2013), 'Lifting Off – Implementing the Strategic Vision for UK Aerospace,' p.11. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/142625/Lifting_off_implementing_the_strategic_vision_for_UK_aerospace.pdf

technologies such as Composites and Additive Manufacturing is starting to extend through the aerospace supply chain. Plastic Electronics has significant potential in the future. Investment in these new technologies is at an early stage.[36]

According to KPMG, UK-based OEMs and Tier-one aerospace companies in UK have a very strong focus on **innovation**, and this is shared by some companies further down the supply chain. However, smaller companies tended to be less associated with breakthrough innovations because of high R&D costs, challenges in accessing funding, and elements of complacency among the supply chain.

4.5 British SMEs and the global aerospace industry

UK aerospace SMEs have a proven track record as suppliers to the global aviation industry.

- Each sale of an Airbus aircraft or an aircraft powered by Rolls-Royce supports approximately 1,700 UK companies for Airbus and 3,000 for Rolls-Royce in their respective supply chains.
- In the case of the A380 UK companies' technical components are worth an estimated 54% of total aircraft value (18% for the wings alone).[37]

[36] Aerospace Growth Partnership (2013), 'Lifting Off – Implementing the Strategic Vision for UK Aerospace,' p.12. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/142625/Lifting_off_implementing_the_strategic_vision_for_UK_aerospace.pdf

[37] KPMG (2013), 'The Future of Civil Aerospace: A Study on the Outlook for the UK Civil Aerospace Manufacturing Sector.' See http://www.kpmg.com/uk/en/issuesandinsights/articlespublications/newsreleases/pages/kpmg-report-outlines-the-future-of-the-uk-civil-aerospace-industry.aspx

Table 5: UK suppliers of components for the A380

A380 parts	UK manufacturers
Avionics	Cobham; BAE Systems; HR Smith; GE Aviation
Nacelles	Bombardier; Aircelle; UTC - Goodrich
Wing assembly	GE Aviation; GKN; Spirit; Doncasters; Teledyne CML
Fuselage	Bombardier; BAE
Landing gear	Dunlop; UTC – Goodrich; MBD; Bromford Industries; Ford Aerospace
Engine and propulsion system	Rolls-Royce; GE Aviation; Eaton; Meggitt; Centrax; Firth Rixson; Esterline Advanced Sensors; Thermal Engineering

KPMG has argued that the global civil aerospace market could see demand for around 27,000 new aircraft & 40,000 new rotorcraft amounting to £2.8 (US $4.5) trillion by 2031. Asia, the Middle East and South America are likely to account for 45% - 60% of demand for new aircraft. CBI analysis indicates that air traffic growth in Asia alone has the potential to contribute an extra £4.7 billion in UK exports annually in the next ten years, adding 20,000 high-value jobs.[38]

- Even if the UK retained its global market share of 17%, the projected increase in orders for new aircraft would be worth nearly £474billion in revenue for UK companies by 2031.[39]
- Further growth for UK aerospace beyond a 17% market share is likely. Emerging economies are currently offering incentives for UK OEMs and suppliers to invest in local civil aerospace hubs to provide strategic access

[38] Aerospace Growth Partnership (2013), 'Lifting Off – Implementing the Strategic Vision for UK Aerospace,' p.9. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/142625/Lifting_off_implementing_the_strategic_vision_for_UK_aerospace.pdf

[39] KPMG (2013), 'The Future of Civil Aerospace: A Study on the Outlook for the UK Civil Aerospace Manufacturing Sector.' See http://www.kpmg.com/uk/en/issuesandinsights/articlespublications/newsreleases/pages/kpmg-report-outlines-the-future-of-the-uk-civil-aerospace-industry.aspx

to growing markets and supply chains.[40] GE Aviation has been working with AVIC Systems of China to develop avionics for the Chinese COMAC C919 aircraft).

- The US (principally Boeing) and other highly developed civil aerospace markets will continue to be important trading markets.

4.6 Government initiatives

The Strategic Vision for UK Aerospace, launched July 2012, has the following aims:

- To ensure that the UK remains Europe's leading aerospace manufacturer in a context of intensifying international competition and rapid innovation.

- To support UK companies at all levels of the supply chain to broaden and diversify their global customer base.

- To provide long-term certainty and stability to encourage industry to develop the technologies for the next generation of aircraft in the UK.[41]

The Aerospace Growth Partnership (AGP) is a unique partnership between Industry and Government that has created a shared vision for the UK Civil Aerospace sector for the next 15 years and beyond. Its main priorities are:

- Supply chain competitiveness (both UK and abroad)
- Technology
- Skills and engagement
- Manufacturing

In March 2013 the government announced the creation of a new **Aerospace Technology Institute** (ATI) with £2 billion of funding (50% government funding,

[40] KPMG (2013), 'The Future of Civil Aerospace: A Study on the Outlook for the UK Civil Aerospace Manufacturing Sector.' See http://www.kpmg.com/uk/en/issuesandinsights/articlespublications/newsreleases/pages/kpmg-report-outlines-the-future-of-the-uk-civil-aerospace-industry.aspx

[41] Aerospace Growth Partnership (2013), 'Lifting Off – Implementing the Strategic Vision for UK Aerospace,' p.9. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/142625/Lifting_off_implementing_the_strategic_vision_for_UK_aerospace.pdf

matched by industry) to help develop new technologies for the aerospace industry.[42]

- The ATI aspires to secure up to 115,000 jobs in the UK aerospace sector and supply chains.[43]
- The **UK Aerodynamics Centre**, a £60 million state-of-the-art aerodynamics research centre will be part of ATI. Industry will invest an additional £40 million to help to support the Centre's R&D programmes.[44]

The **National Aerospace Technology Exploitation Programme (NATEP)**, which supports smaller companies to innovate in products and manufacturing techniques. This is intended to support innovation among supply chain SMEs complementary to the R&D programmes of OEMs and Tier-one suppliers.[45] This could help the UK aerospace industry to outperform global competition for technology and production.

The government is also focused on skills in the sector, creating **500 new Masters level graduate places** through joint industry and government bursary funding.

[42] KPMG (2013), 'The Future of Civil Aerospace: A Study on the Outlook for the UK Civil Aerospace Manufacturing Sector.' See http://www.kpmg.com/uk/en/issuesandinsights/articlespublications/newsreleases/pages/kpmg-report-outlines-the-future-of-the-uk-civil-aerospace-industry.aspx

[43] Aerospace Growth Partnership (2013), 'Lifting Off – Implementing the Strategic Vision for UK Aerospace,' p.12. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/142625/Lifting_off_implementing_the_strategic_vision_for_UK_aerospace.pdf

[44] Aerospace Growth Partnership (2013), 'Lifting Off – Implementing the Strategic Vision for UK Aerospace,' p.11. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/142625/Lifting_off_implementing_the_strategic_vision_for_UK_aerospace.pdf

[45] KPMG (2013), 'The Future of Civil Aerospace: A Study on the Outlook for the UK Civil Aerospace Manufacturing Sector.' See http://www.kpmg.com/uk/en/issuesandinsights/articlespublications/newsreleases/pages/kpmg-report-outlines-the-future-of-the-uk-civil-aerospace-industry.aspx

5 Automotives

5.1 Definition, sector size and statistical trends

The Automotive sector comprises 13 four-digit SIC classes. Unlike with Aerospace, there are no additional classes that only cover Automotive in part.

ONS data shows that the number of registered SMEs within each of these 13 classes for the years 2011-13 was as follows (listed in descending order according to the number of SMEs in 2013):

SIC Class	Industry	Description	No. of SMEs (2011)	No. of SMEs (2012)	No. of SMEs (2013)	Change 2011-13 (%)
4520	Automotive	45200 Maintenance and repair of motor vehicles	35,215	36,625	36,660	4.1%
4511	Automotive	45111 Sale of new cars and light motor vehicles; and 45112 Sale of used cars and light motor vehicles	19,865	19,830	19,405	-2.3%
4531	Automotive	45310 Wholesale trade of motor vehicle parts and accessories	5,135	5,040	4,800	-6.5%
4532	Automotive	45320 Retail trade of motor vehicle parts and accessories	3,005	3,235	3,385	12.6%
4540	Automotive	45400 Sale, maintenance and repair of motorcycles and related parts and accessories	2,205	2,170	2,145	-2.7%
4519	Automotive	45190 Sale of other motor vehicles	880	970	1,020	15.9%
2932	Automotive	29320 Manufacture of other parts and accessories for motor vehicles	1,120	1,045	1,005	-10.3%

SIC Class	Industry	Description	No. of SMEs (2011)	No. of SMEs (2012)	No. of SMEs (2013)	Change 2011-13 (%)
2920	Automotive	29201 Manufacture of bodies (coachwork) for motor vehicles (except caravans); 29202 Manufacture of trailers and semi-trailers; and 29203 Manufacture of caravans	745	745	730	-2.0%
2910	Automotive	29100 Manufacture of motor vehicles	615	645	615	0.0%
2931	Automotive	29310 Manufacture of electrical and electronic equipment for motor vehicles and their engines	130	135	140	7.7%
3099	Automotive	30990 Manufacture of other transport equipment n.e.c.	105	125	140	33.3%
3092	Automotive	30920 Manufacture of bicycles and invalid carriages	95	105	105	10.5%
3091	Automotive	30910 Manufacture of motorcycles	70	75	70	0.0%
		Total	**69,185**	**70,745**	**70,220**	**1.50%**

As of 2013, the 70,200 companies within Automotive account for 3.3% of the SMEs within the UK. Of those, by far the largest number are engaged in the 'Maintenance and repair of motor vehicles' (SIC 4520).

Though the most recent data indicates a modest fall in the number of SMEs between 2012 and 2013, the total number of SMEs in the sector has still grown by 1.5% over the two-year period 2011 to 2013.

5.2 Overview

More than 40 companies manufacture vehicles in the UK from passenger cars through to specialist vehicles and niche marques, as well as van, truck and bus builders.[46]

[46] Automotive Council (2012), 'Growing the UK automotive supply chain: the way forward (2012 update),' p.2. http://www.automotivecouncil.co.uk/wp-content/uploads/2012/08/GROWING-THE-UK-AUTOMOTIVE-SUPPLY-CHAIN-Aug-2012.pdf

- In 2011 the UK automotive sector produced over 1.4 million cars and 2.5 million engines, exporting in excess of 80% of its production. The Automotive Council expects that it will be producing some 2 million vehicles by 2015.[47] The UK also produced 2.5 million engines in 2011.
- The sector generates around £50 billion in annual turnover, delivering around £10 billion in net value-added to the economy.[48]
- The sector has recovered from recession, with production of both cars and commercial vehicles up 12% over the first half of 2012. Elsewhere in Europe, the recovery in production levels has been slower.[49]

The UK automotive industry employs 719,000 people across manufacturing, retail and aftermarket sectors; 145,000 are employed in manufacturing firms and their suppliers.

- More than 52% of employment (76,300 jobs) in automotive manufacturing is in firms with fewer than 500 staff that make up nearly 99% of all firms in the sector. The remainder (69,500 jobs) are provided by fewer than 50 manufacturing firms.[50]

The UK automotive supply chain typically generates £4.8bn of added value annually. [51]

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[47] Automotive Council (2012), 'Growing the UK automotive supply chain: the way forward (2012 update),' p.1. http://www.automotivecouncil.co.uk/wp-content/uploads/2012/08/GROWING-THE-UK-AUTOMOTIVE-SUPPLY-CHAIN-Aug-2012.pdf. Recent examples of major investment in the automotive sector in the UK include the following: In September 2013 Jaguar Land Rover announced a £1.5bn investment at its Solihull plant to enable large-scale manufacture of aluminium-based vehicles, also creating 1,700 new jobs. In December 2012: Nissan announced an investment of £250mn in its Sunderland plant to manufacture the new Infiniti luxury car, which is expected to create hundreds of jobs. Finally, In September 2012: Honda confirmed a £267 million investment programme at its Swindon manufacturing site, supporting the introduction of the new Civic and CR-V models and the 1.6 litre diesel engine for Honda Civic. See http://www.smmt.co.uk/investment/

[48] Andy Rumfitt (2012), 'Give Them Some Credit! A survey of the barriers to funding the UK's automotive supply chain,' p.12. http://www.smmt.co.uk/wp-content/uploads/sites/2/Give-Them-Some-Credit-Smith-Institute-and-SMMT.pdf

[49] KPMG (2012), 'Capturing Opportunity: An assessment of supply chain opportunities in the UK automotive sector,' p.6. http://www.kpmg.com/UK/en/IssuesAndInsights/ArticlesPublications/Documents/PDF/Market%20Sector/Automotive/capturing-opportunity.pdf

[50] Andy Rumfitt (2012), 'Give Them Some Credit! A survey of the barriers to funding the UK's automotive supply chain,' p.12. http://www.smmt.co.uk/wp-content/uploads/sites/2/Give-Them-Some-Credit-Smith-Institute-and-SMMT.pdf

[51] Society of Motor Manufacturers and Traders (2013), 'Motor Industry Facts 2013,' p.11. http://www.smmt.co.uk/wp-content/uploads/sites/2/SMMT-2013-Motor-Industry-Facts-guide.pdf

5.3 Structure

The sector has a similar structure to that of Aerospace, as follows:

- OEMs (major vehicle manufacturers)
- Tier-one (suppliers of assembled components and systems to OEMs – e.g. dashboards; seats; drive trains)
- Tier-two (suppliers of individual parts for assembly by tier-one companies – e.g. electronics; seat frames; cushions)
- Tier-three – n (suppliers of engineering materials, specialist services, raw materials, sub-components and tools – e.g. sheet metal; wire; bars; specialist treatments)

According to the Society of Motor Manufacturers and Traders, as of July 2012 total OEM spend in the UK was £31.6bn (around 36% of their overall global purchasing spend).[52]

- £11bn of this was spent with Tier One suppliers; the Automotive Council has suggested this could potentially reach £21.5bn by 2016 (given the likely increase in automotive production in the UK over that period).
- UK-based OEMs are reportedly increasing local sourcing practices to support new model programmes and facility expansion, creating further opportunities for the supply chain.[53]

About 80% of all component types required for vehicle assembly operations can be produced by UK suppliers.[54] OEMs with plant in the UK have a track record of sourcing from UK-based suppliers, rather than those overseas.

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[52] Automotive Council (2012), 'Growing the UK automotive supply chain: the way forward (2012 update),' p.3. http://www.automotivecouncil.co.uk/wp-content/uploads/2012/08/GROWING-THE-UK-AUTOMOTIVE-SUPPLY-CHAIN-Aug-2012.pdf

[53] Society of Motor Manufacturers and Traders (2013), 'Motor Industry Facts 2013,' p.11. http://www.smmt.co.uk/wp-content/uploads/sites/2/SMMT-2013-Motor-Industry-Facts-guide.pdf

[54] Automotive Council (2012), 'Growing the UK automotive supply chain: the way forward (2012 update),' p.3. http://www.automotivecouncil.co.uk/wp-content/uploads/2012/08/GROWING-THE-UK-AUTOMOTIVE-SUPPLY-CHAIN-Aug-2012.pdf

- On average 74% of UK-based suppliers manufacture in the UK (as opposed to those who assemble, late-configure, or distribute components);
    - this ratio is lower at Tier-one, where 65% of supplies are manufactured in the UK,
    - virtually all second-tier suppliers operate manufacturing facilities in the UK.
- The average supplier serves six customers, with a strong bias towards OEMs operating vehicle and engine assembly plants in the UK.[55]

Supply chains of OEMs are typically split by commodity, as follows:

- Sub-frames tend to be sourced in the UK due to their weight with local assembly of suspension modules.
- Exhausts, radiators and cooling systems tend to be sourced from the UK, as does most trim and bodywork.
- Electrical components tend to be sourced from the Far East; gearboxes are often imported from Germany and Austria; and tools on presses are mostly imported from India and China.[56]

While engines tend to be assembled in the UK, there is limited capacity (this has resulted in Jaguar LandRover planning a new engine plant to support its own operations).[57]

The Automotive Council suggests that leading UK supply chain opportunities are currently as follows:

[55] Automotive Council (2012), 'Growing the UK automotive supply chain: the way forward (2012 update),' p.3. http://www.automotivecouncil.co.uk/wp-content/uploads/2012/08/GROWING-THE-UK-AUTOMOTIVE-SUPPLY-CHAIN-Aug-2012.pdf

[56] Andy Rumfitt (2012), 'Give Them Some Credit! A survey of the barriers to funding the UK's automotive supply chain,' p.22. http://www.smmt.co.uk/wp-content/uploads/sites/2/Give-Them-Some-Credit-Smith-Institute-and-SMMT.pdf

[57] Andy Rumfitt (2012), 'Give Them Some Credit! A survey of the barriers to funding the UK's automotive supply chain,' p.22. http://www.smmt.co.uk/wp-content/uploads/sites/2/Give-Them-Some-Credit-Smith-Institute-and-SMMT.pdf

Table 6: Supply chain opportunities (automotive)

Component	Estimated value opportunity with UK automotive supply chain (2012), £mn
Engine castings	370
Steering systems	220
Trim (door cards, headlining, plastics etc)	170
Engine forgings	170
Harnesses	160
Seating	150
Tyres	140
Alloy wheels	140
Lighting	130
Electronics (ECU, ESP, ABS, PDC)	110

Automotive Council data indicates that the supply chain is dispersed around the UK, but that there is clear clustering in the following locations:

- West Midlands
- Northern Ireland
- The Leeds-Bradford area
- Humberside.[58]

5.4 Challenges

The Smith Institute regards the main barriers to SME growth in automotives in the UK as:

- Poor understanding of the automotive sector among banks and lenders, who often insisted on various personal securities (e.g. houses) as collateral for business loans, despite the sector's health.

[58] Automotive Council UK (2013), 'Driving Success – a strategy for growth and sustainability in the UK automotive sector - summary,' p.3. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/211902/13-975es-driving-success-uk-automotive-strategy-for-growth-and-sustainability.pdf

- Deteriorating credit conditions, and declining availability of credit
- Securing finance for tooling development costs
- Ensuring that payment terms and conditions are cascaded down the supply chain
- Lack of awareness among some owner-managers of finance options, and a conservative approach to investment among some of these.[59]

A shortage of skilled workers and apprentices is also an issue in the sector.[60]

The Automotive Council has suggested that there are currently around £3bn of unfulfilled opportunities (at 2011 levels) for OEMs to buy from UK supply chain because of under-capacity within the latter.[61] A major challenge over the immediate term for SMEs is therefore ensuring that the UK's automotive supply chain is able to meet the growing demand of UK-based OEMs.

A strong element of the Automotive Council's work is also looking at the **transition to low carbon transportation** and **new supply chain opportunities**, with particular regard to:

- Electric machines and power electronics
- Energy storage and energy management
- Internal combustion engines
- Light weight vehicle and powertrain structures
- Intelligent mobility[62]

The Automotive Council estimates that by 2040 no new car manufactured in Europe will be powered solely by a petrol or diesel powertrain, and that this one-in-

[59] Andy Rumfitt (2012), 'Give Them Some Credit! A survey of the barriers to funding the UK's automotive supply chain,' pp.6-7. http://www.smmt.co.uk/wp-content/uploads/sites/2/Give-Them-Some-Credit-Smith-Institute-and-SMMT.pdf

[60] SMMT news section, 'Suppliers discuss how to plug the gap in the UK supply chain,' 13 June 2013. http://www.smmt.co.uk/2013/06/suppliers-discuss-how-to-plug-the-gap-in-the-uk-supply-chain/

[61] KPMG (2012), 'Capturing Opportunity: An assessment of supply chain opportunities in the UK automotive sector,' p.12. http://www.kpmg.com/UK/en/IssuesAndInsights/ArticlesPublications/Documents/PDF/Market%20Sector/Automotive/capturing-opportunity.pdf

[62] Automotive Council (2012), 'Growing the UK automotive supply chain: the way forward (2012 update),' p.6. http://www.automotivecouncil.co.uk/wp-content/uploads/2012/08/GROWING-THE-UK-AUTOMOTIVE-SUPPLY-CHAIN-Aug-2012.pdf

a-lifetime technology shift will open considerable opportunities to SMEs throughout the automotive supply chain.[63]

5.5 Government and industry initiatives

Key government initiatives in the automotive sector are:

- *Driving Success: UK automotive strategy for growth and sustainability*.[64] This is a strategy for the future of the UK automotive industry over the next five years.

- The government and automotive industry are investing £500 million each over the next ten years in an **Advanced Propulsion Centre**. Its aim is to research, develop and commercialise the technologies for the vehicles of the future. Backed by 27 companies in the sector, including supply chain companies, the commitment is expected to secure at least 30,000 jobs currently linked to producing engines and create many more in the supply chain.[65]

[63] Automotive Council (2012), 'Driving Success – a strategy for growth and sustainability in the UK automotive sector,' p.8. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/211901/13-975-driving-success-uk-automotive-strategy-for-growth-and-sustainability.pdf

[64] https://www.gov.uk/government/publications/driving-success-uk-automotive-strategy-for-growth-and-sustainability

[65] https://www.gov.uk/government/news/billion-pound-commitment-to-power-uk-auto-sector-to-the-future

6 Construction

6.1 Definition, sector size and statistical trends

There are 59 four-digit SIC classes fully included within Construction, and a further two classes that potentially include construction-related activities in part. Note that we have included Engineering activities within this (7112), some of which may be unrelated to Construction; however, the 2007 SIC codes (upon which this analysis is based) do not enable a specific focus on civic and structural Engineering activities (the new 2013 SIC codes include a code, 74204, specifically related to civil and structural Engineering).

ONS data shows that the number of registered SMEs within each of those classes for the years 2011-13 was as follows (listed in descending order according to the number of SMEs in 2013):

SIC Class	Industry	Description	No. of SMEs (2011)	No. of SMEs (2012)	No. of SMEs (2013)	Change 2011-13 (%)
7112	Engineering	71121 Engineering design activities for industrial process and production; 71122 Engineering related scientific and technical consulting activities; 71129 Other engineering activities	54,705	57,150	60,155	+10.0%
4120	Construction	41201 Construction of commercial buildings; and 41202 Construction of domestic buildings	41,940	41,615	39,405	-6.0%
4321	Construction	43210 Electrical installation	37,455	38,595	37,590	0.4%
4322	Construction	43220 Plumbing, heat and air-conditioning installation	29,695	30,620	30,060	1.2%
4110	Construction	41100 Development of building projects	33,495	30,815	28,890	-13.7%
4332	Construction	43320 Joinery installation	21,945	21,775	21,125	-3.7%

SIC Class	Industry	Description	No. of SMEs (2011)	No. of SMEs (2012)	No. of SMEs (2013)	Change 2011-13 (%)
4399	Construction	43991 Scaffold erection; and 43999 Other specialised construction activities n.e.c.	19,865	19,775	19,805	-0.3%
4339	Construction	43390 Other building completion and finishing	17,845	18,990	18,875	5.8%
4299	Construction	42990 Construction of other civil engineering projects n.e.c.	17,335	16,490	15,865	-8.5%
4334	Construction	43341 Painting; and 43342 Glazing	13,305	13,470	13,040	-2.0%
7111	Construction	71111 Architectural activities	10,945	12,090	12,970	18.5%
4329	Construction	43290 Other construction installation	6,065	7,495	8,400	38.5%
4391	Construction	43910 Roofing activities	6,750	6,825	6,770	0.3%
4333	Construction	43330 Floor and wall covering	6,420	6,470	6,340	-1.2%
1623	Construction	16230 Manufacture of other builders' carpentry and joinery	5,125	5,120	5,065	-1.2%
4673	Construction	46730 Wholesale of wood, construction materials and sanitary equipment	5,040	4,950	4,895	-2.9%
4331	Construction	43310 Plastering	4,140	4,245	4,110	-0.7%
7732	Construction	77320 Renting and leasing of construction and civil engineering machinery and equipment	3,945	3,870	3,785	-4.1%
2511	Construction	25110 Manufacture of metal structures and parts of structures	3,050	3,070	3,035	-0.5%
4674	Construction	46740 Wholesale of hardware, plumbing and heating equipment and supplies	3,015	2,955	2,955	-2.0%
4211	Construction & Aerospace (part)	42110 Construction of roads and motorways	2,480	2,425	2,455	-1.0%
4312	Construction	43120 Site preparation	1,850	2,060	2,255	21.9%
4613	Construction	46130 Agents involved in the sale of timber and building materials	1,665	1,675	1,635	-1.8%
2223	Construction	22230 Manufacture of builders ware of plastic	1,730	1,640	1,585	-8.4%
2512	Construction	25120 Manufacture of doors and windows of metal	1,205	1,190	1,155	-4.1%

SIC Class	Industry	Description	No. of SMEs (2011)	No. of SMEs (2012)	No. of SMEs (2013)	Change 2011-13 (%)
2370	Construction	23700 Cutting, shaping and finishing of stone	1,165	1,170	1,120	-3.9%
2825	Construction	28250 Manufacture of non-domestic cooling and ventilation equipment	905	900	850	-6.1%
3311	Construction	33110 Repair of fabricated metal products	470	575	675	43.6%
2740	Construction	27400 Manufacture of electric lighting equipment	665	655	665	0.0%
1610	Construction	16100 Sawmilling and planing of wood	600	585	555	-7.5%
2572	Construction	25720 Manufacture of locks and hinges	600	585	555	-7.5%
4311	Construction	43110 Demolition	460	520	525	14.1%
2361	Construction	23610 Manufacture of concrete products for construction purposes	520	490	485	-6.7%
4212	Construction	42120 Construction of railways and underground railways	245	280	480	95.9%
2312	Construction	23120 Shaping and processing of flat glass	450	430	425	-5.6%
4222	Construction	42220 Construction of utility projects for electricity and telecommunications	145	190	305	110.3%
4291	Construction	42910 Construction of water projects	295	300	295	0.0%
4313	Construction	43130 Test drilling and boring	265	280	265	0.0%
0811	Construction	08110 Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate	275	250	245	-10.9%
4221	Construction	42210 Construction of utility projects for fluids	150	170	230	53.3%
0812	Construction	08120 Operation of gravel and sand pits; mining of clays and kaolin	220	210	195	-11.4%
2363	Construction	23630 Manufacture of ready-mixed concrete	195	195	195	0.0%
2814	Construction	28140 Manufacture of taps and valves	180	180	170	-5.6%
2399	Construction	23990 Manufacture of other non-metallic mineral products n.e.c.	155	160	150	-3.2%
0990	Construction	09900 Support activities for other mining and quarrying	55	95	125	127.3%

SIC Class	Industry	Description	No. of SMEs (2011)	No. of SMEs (2012)	No. of SMEs (2013)	Change 2011-13 (%)
1621	Construction	16210 Manufacture of veneer sheets and wood-based panels	135	130	125	-7.4%
2332	Construction	23320 Manufacture of bricks, tiles and construction products, in baked clay	125	125	125	0.0%
2369	Construction	23690 Manufacture of other articles of concrete, plaster and cement	135	135	120	-11.1%
2521	Construction	25210 Manufacture of central heating radiators and boilers	150	135	110	-26.7%
2331	Construction	23310 Manufacture of ceramic tiles and flags	95	90	80	-15.8%
2733	Construction	27330 Manufacture of wiring devices	55	65	65	18.2%
4213	Construction	42130 Construction of bridges and tunnels	30	45	55	83.3%
2362	Construction	23620 Manufacture of plaster products for construction purposes	35	30	35	0.0%
1622	Construction	16220 Manufacture of assembled parquet floors	5	5	10	100.0%
2342	Construction	23420 Manufacture of ceramic sanitary fixtures	0	5	5	n/a
2351	Construction	23510 Manufacture of cement	10	5	5	-50.0%
2352	Construction	23520 Manufacture of lime and plaster	5	5	5	0.0%
2364	Construction	23640 Manufacture of mortars	5	5	5	0.0%
2365	Construction	23650 Manufacture of fibre cement	5	10	5	0.0%
2311	Construction	23110 Manufacture of flat glass	0	0	0	n/a
7490	Construction (part)	74901 Environmental consulting activities; and 74902 Quantity surveying activities[66]	26,810	32,615	34,175	27.5%
		Total (exclusively Construction – excluding 7490)	**359,815**	**364,385**	**361,480**	**+0.5%**
		Total (all – including part Construction)	**386,625**	**397,000**	**395,655**	**+2.3%**

[66] Totals for this SIC class include 74909, which is not Construction related.

Of the six sectors of focus in this research, Construction is by far the, comprising 14% of the UK's registered SMEs. According to BIS, construction contributes almost £90 billion to the UK economy (or 6.7%) in value added, and provides 2.93 million jobs (equivalent to about 10% of total UK employment).[67]

Within Construction, several of the most sizable SIC classes have seen a significant fall in the number of registered SMEs between 2011 and 2013: for example,

- SMEs in the 'Construction of commercial and domestic buildings' (SIC 4120) fell by 6.0%, while the number of SMEs within 'Development of building projects' (SIC 4110) dropped 13.7%.

However, the overall growth in the number of SMEs was a modest 0.5% (although note that there was a decrease between 2012 and 2013), with the large falls in some classes offset by big increases in others:

- For example, an 18.5% increase in the number of registered SMEs engaged in 'Architectural activities' (SIC 7110).
- A 10% increase in SMEs within activities related to Engineering (SIC 7112); however, some of this activity may be unrelated to the Construction industry.

If the fast-growing SIC 7490 – which 'Environmental consulting activities' and 'Quantity surveying' activities fall within – is included within Construction, then the picture across the sector between 2011 and 2013 is one of modest growth in the number of registered SMEs; again, however, there was a decrease in numbers between 2012 and 2013.

[67] Department for Business, Innovation and Skills (2013), 'UK Construction: An Economic Analysis of the Sector,' p.v. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/210060/bis-13-958-uk-construction-an-economic-analysis-of-sector.pdf

6.2 Sector overview

UK construction is characterised by high levels of fragmentation. At least 99.9% of firms are SMEs and, of those, some 83% employ no more than one person.[68] There is a very high proportion of self-employment in the sector compared with others researched.

The sector was heavily impacted by the recent recession.[69]

- In 2007 the construction sector accounted for 8.9% of the UK's GVA; by 2011 this contribution had decreased to 6.7%. In real terms, construction output in 2012 was 88.5% of levels recorded in 2008,.[70]

However, very recent construction data for early 2014 has shown some pick-up in the construction economy, with activity in January 2014 across all sub-sectors (house-building, commercial property construction, and civil engineering) seeing rising activity growing at the fastest rate since 2007.[71]

6.3 Structure

The UK construction industry has a very large UK-based supply chain (for every £1 spent by the industry in the UK around 90p remains on-shore). The UK industry is more fragmented than its European comparators, with a much higher proliferation

[68] Department for Business, Innovation and Skills (2013), 'UK Construction: An Economic Analysis of the Sector,' p.27. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/210060/bis-13-958-uk-construction-an-economic-analysis-of-sector.pdf.

[69] HM Government (2013), 'Construction 2025,' p.13. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/210099/bis-13-955-construction-2025-industrial-strategy.pdf

[70] Department for Business, Innovation and Skills (2013), 'Supply Chain Analysis in the Construction Industry: A Report for the Construction Industrial Strategy,' p.4. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/252026/bis-13-1168-supply-chain-analysis-into-the-construction-industry-report-for-the-construction-industrial-strategy.pdf

[71] In a sign that the British economic recovery continues, data firm Markit's monthly PMI jumped to 64.6 last month, driven by a surge in new work - up from December's 62.1. http://www.theguardian.com/business/2014/feb/04/markets-slide-nikkei-europe-ftse-business-live#block-52f0b324e4b0aa9fbcd8754b

of SMEs and sole traders. Evidence indicates higher levels of sub-contracting in the UK than on the continent.[72]

The sector is structured in several tiers, similar to Aerospace and Automotives:

- Main contractors.
- Tier 1: Main contractors with a direct commercial relationship with a client.
- Tier 2: Sub-contractors and suppliers with a direct contract with the Tier 1 main contractor. These are often specialist contractors (e.g. cladding, building services or finishes contractors). Large-scale commercial contracts typically employ 4 or 5 Tier 2 sub-contractors working on major packages associated with sub-structures, structures and envelope, and building services. Delivery of these packages can be undertaken by Tier 3 firms.[73]
- Tier 3 and below: Sub-contractors and suppliers working for these sub-contractors.[74]

A BIS study has found that UK construction supply chains are extremely fragmented (more so than in other sectors):

- For a 'typical' large building project (i.e. the £20 - £25 million range) BIS reports that a main contractor may be directly managing around 70 sub-contracts of which a significant proportion are worth less than £50,000.
- 25% of Tier 2 contracts on large contracts with a value in excess of £15 million are typically for values below £10,000. For a regional project, the subcontract size may be even smaller.
- Much of the day-to-day construction work in the industry is delivered by companies at Tier 3 or below.[75]

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[72] Department for Business, Innovation and Skills (2013), 'UK Construction: An Economic Analysis of the Sector,' p.v. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/210060/bis-13-958-uk-construction-an-economic-analysis-of-sector.pdf

[73] Department for Business, Innovation and Skills (2013), 'Supply Chain Analysis in the Construction Industry: A Report for the Construction Industrial Strategy,' p.6. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/252026/bis-13-1168-supply-chain-analysis-into-the-construction-industry-report-for-the-construction-industrial-strategy.pdf

[74] Department for Business, Innovation and Skills (2013), 'Supply Chain Analysis in the Construction Industry: A Report for the Construction Industrial Strategy,' p.6. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/252026/bis-13-1168-supply-chain-analysis-into-the-construction-industry-report-for-the-construction-industrial-strategy.pdf

The implications of this fragmentation reportedly include high transaction costs, increased requirements for management input and coordination of activities on site, and fewer opportunities to drive out waste or reduce cost.

6.4 Challenges

BIS reports that the construction contracting industry has **low levels of innovation** compared with other sectors.[76] The Technology Strategy Board has identified the following barriers to innovation:

- A culture of subcontracting, contributing to slow spread of information and innovation
- Concerns over product and professional liability
- A general culture of risk-aversion both among contractors and among consumers.[77]

There are financial challenges in the sector:

- BIS reports that construction SMEs find it harder to access finance than do SMEs in other sectors (because lenders view construction SMEs as higher risk than SMEs elsewhere), and lack awareness about government finance initiatives available to them.[78]

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[75] Although expenditure on wider innovation such as design and organisational innovation is between two to three times larger than industry's expenditure on tangible assets such as machinery and tools (£7.42 billion versus £3.15 billion in 2007), BIS has concluded that the proportion of firms innovating still ranks low relative to other sectors. Department for Business, Innovation and Skills (2013), 'Supply Chain Analysis in the Construction Industry: A Report for the Construction Industrial Strategy,' p.4. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/252026/bis-13-1168-supply-chain-analysis-into-the-construction-industry-report-for-the-construction-industrial-strategy.pdf

[76] Department for Business, Innovation and Skills (2013), 'UK Construction: An Economic Analysis of the Sector,' p.vii. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/210060/bis-13-958-uk-construction-an-economic-analysis-of-sector.pdf

[77] Technology Strategy Board (2013), 'Driving Innovation: Delivery Plan 2013-2014,' p.32. https://www.innovateuk.org/documents/1524978/2138994/Delivery+Plan+-+Financial+year+2013-14/c435471d-222c-4e63-8269-d0f4b2b61c2f

[78] Department for Business, Innovation and Skills (2013), 'Supply Chain Analysis in the Construction Industry: A Report for the Construction Industrial Strategy,' p.5. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/252026/bis-13-1168-supply-chain-analysis-into-the-construction-industry-report-for-the-construction-industrial-strategy.pdf

- Construction SMEs also experience difficulties in winning work for major public sector contracts. More than 40% of construction SMEs are failing to win nine out of ten public sector contracts and over half have seen their success rate fall when bidding for public sector work over the past five years, according to a new report by the Federation of Master Builders (FMB).[79]

There is also a need to address low export growth (the sector accounts for fewer than 2% of all UK exports, although this proportion has slowly grown over the past ten years).[80]

According to BIS[81]:

- In 2012, only 6% of construction contracting SMEs were exporting; the value of these exports is around £7mn per annum.[82] Around two thirds of contractors do not have a product or a service suitable for export. Export activity among architects and quantity surveyors is better established, accounting for some £16mn per annum of services;
- Construction businesses often lack awareness of the potential benefits of exporting, and can lack the necessary knowledge or management skills to successfully exploit overseas markets.

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[79] See http://www.fmb.org.uk/news-publications/newsroom/press-releases/2013/june/construction-smes-failing-to-win-public-sector-contracts130618/

[80] 'Is it time you shaped up and shipped out?', Construction Manager, 26 August 2013. http://www.construction-manager.co.uk/agenda/it-time-shape-and-ship-out/

[81] According to BIS, UK construction exports are mixed across the various sub-sectors. UK exports in construction contracting have been growing steadily to give a trade surplus of about £590 million in 2011. The UK is also strong in exports of architecture and quantity surveying services, with a trade surplus of about £530 million in 2011. However, the UK's trade performance in construction related products is less positive with a trade deficit of about £6.2 billion in 2012. Department for Business, Innovation and Skills (2013), 'UK Construction: An Economic Analysis of the Sector,' p.vi. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/210060/bis-13-958-uk-construction-an-economic-analysis-of-sector.pdf

[82] Figures from Kingston University suggest that 19% of construction SMEs are exporting to international markets (a smaller percentage than in aerospace), although the Kingston researchers expressed surprise that the figure for construction was as high as this, speculating that the SMEs involved in this were likely to be developing property for overseas investors, or providing labour overseas). Kingston University (2011), 'The eXport factor: British SMEs' approach to doing business overseas,' p.2.See also 'Is it time you shaped up and shipped out?', Construction Manager, 26 August 2013. http://www.construction-manager.co.uk/agenda/it-time-shape-and-ship-out/

- UK construction companies tend to collaborate less in comparison to many European countries which presents difficulties for accessing foreign markets.[83]

The global construction market is due to grow by over 70% by 2025, representing potential opportunities for growth, but also a need for the sector to export more goods and services than at present.[84]

- Exports over the last ten years have been driven primarily by high-skill firms winning work consulting on eco-towns and prestige projects in emerging economies, rather than the export of construction contracts.
- Worldwide demand for green buildings, mass housing and world-class architecture is such that British architects, engineers, surveyors and project managers could collectively increase exports three-fold by 2025, although this is likely to require a cultural change within a sector that has historically overwhelmingly served domestic markets.[85]

A number of overarching factors are likely to affect global demand for construction over the period to 2025, including globalisation, demographic changes, demand for green and sustainable construction, both in the UK and abroad, the increasing importance of technology in construction and growing demand from emerging economies such as China and Brazil.[86] BIS reports that these opportunities are most likely to benefit construction services such as architecture and those developing advanced technologies. The UK has a relatively higher proportion of construction patents in comparison to other G7 and BRIC countries.[87]

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[83] Department for Business, Innovation and Skills (2013), 'UK Construction: An Economic Analysis of the Sector,' p.vi. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/210060/bis-13-958-uk-construction-an-economic-analysis-of-sector.pdf

[84] HM Government (2013), 'Construction 2025,' p.3. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/210099/bis-13-955-construction-2025-industrial-strategy.pdf

[85] 'Is it time you shaped up and shipped out?', Construction Manager, 26 August 2013. http://www.construction-manager.co.uk/agenda/it-time-shape-and-ship-out/

[86] Department for Business, Innovation and Skills (2013), 'UK Construction: An Economic Analysis of the Sector,' p.v. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/210060/bis-13-958-uk-construction-an-economic-analysis-of-sector.pdf

[87] Department for Business, Innovation and Skills (2013), 'UK Construction: An Economic Analysis of the Sector,' p.vi. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/210060/bis-13-958-uk-construction-an-economic-analysis-of-sector.pdf

The Government's Industrial Strategy for Construction aims to narrow the trade gap in the UK construction industry by doubling exports.

Skills are a further challenge for the industry (around 20% of vacancies in construction are hard to fill).[88]

- A smaller proportion of UK construction firms have staff training plans than companies in other sectors do;
- Training among the self-employed is very low.

6.5 Government initiatives

The Government's Industrial Strategy for Construction (Construction 2025), published in 2013, aims to achieve the following by 2025:

- 33% reduction in the initial cost of construction and the whole life cost of built assets
- 50% reduction in greenhouse gas emissions in the built environment
- 50% reduction in the overall time, from inception to completion, for new-build and refurbished assets
- 50% reduction in the trade gap between total exports and total imports for construction products and materials; in particular to ensure that leading-edge SMEs in the sector (e.g. those involved in BIM) are able to better access export markets in an era in which there will be growing opportunities overseas.[89]

There have also been various initiatives to deregulate planning laws in an effort to increase both residential and commercial building in the UK, including:

- 2011 Localism Act

[88] Department for Business, Innovation and Skills (2013), 'UK Construction: An Economic Analysis of the Sector,' p.vi. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/210060/bis-13-958-uk-construction-an-economic-analysis-of-sector.pdf

[89] HM Government (2013), 'Construction 2025,' p.3. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/210099/bis-13-955-construction-2025-industrial-strategy.pdf

- The Growth and Infrastructure Act
- National Policy Planning Framework
- A number of funding schemes for new infrastructure and housing (e.g. the Local Infrastructure Fund; the Growing Places Fund)
- New infrastructure projects (e.g. HS2; the Northern Line extension to Battersea).[90]

[90] HM Government (2013), 'Construction 2025,' p.3. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/210099/bis-13-955-construction-2025-industrial-strategy.pdf

7 Food

7.1 Definition, sector size and statistical trends

The Food sector includes 48 four-digit SIC classes in their entirety. There are no additional classes that only cover Food in part. The 48 codes include both food manufacturing and also food retail.

ONS data indicates that the number of registered SMEs within each of these classes for the years 2011-13 was as follows (listed in descending order according to the number of SMEs in 2013):

SIC Class	Industry	Description	No. of SMEs (2011)	No. of SMEs (2012)	No. of SMEs (2013)	Change 2011-13 (%)
4711	Food	47110 Retail sale in non-specialised stores with food, beverages or tobacco predominating;	28,765	29,140	29,010	+0.9%
4722	Food	47220 Retail sale of meat and meat products in specialised stores	6,270	6,245	6,110	+2.6%
4729	Food	47290 Other retail sale of food in specialised stores	4,905	4,900	4,850	-1.1%
4725	Food	47250 Retail sale of beverages in specialised stores	4,670	4,615	4,490	-3.9%
4634	Food	46341 Wholesale of fruit and vegetable juices, mineral water and soft drinks; and 46342 Wholesale of wine, beer, spirits and other alcoholic beverages	3,190	3,400	3,470	8.8%
4724	Food	47240 Retail sale of bread, cakes, flour confectionery and sugar confectionery in specialised stores	3,130	3,280	3,285	+5.0%
4721	Food	47210 Retail sale of fruit and vegetables in specialised stores	3,295	3,380	3,235	-1.8%

SIC Class	Industry	Description	No. of SMEs (2011)	No. of SMEs (2012)	No. of SMEs (2013)	Change 2011-13 (%)
4639	Food	46390 Non-specialised wholesale of food, beverages and tobacco	2,755	2,735	2,735	-0.7%
4632	Food	46320 Wholesale of meat and meat products	2,330	2,100	2,150	-7.7%
1071	Food	10710 Manufacture of bread; manufacture of fresh pastry goods and cakes	1,905	2,030	2,085	9.4%
4631	Food	46310 Wholesale of fruit and vegetables	2,110	2,065	2,035	-3.6%
4638	Food	46380 Wholesale of other food, including fish, crustaceans and molluscs	1,685	1,625	1,595	-5.3%
4723	Food	47230 Retail sale of fish, crustaceans and molluscs in specialised stores	1,200	1,225	1,200	+0.0%
1105	Food	11050 Manufacture of beer	550	630	730	32.7%
4633	Food	46330 Wholesale of dairy products, eggs and edible oils and fats	735	715	710	-3.4%
1089	Food	10890 Manufacture of other food products n.e.c.	590	570	580	-1.7%
4636	Food	46360 Wholesale of sugar and chocolate and sugar confectionery	520	525	560	7.7%
1013	Food	10130 Production of meat and poultry meat products	565	570	535	-5.3%
4637	Food	46370 Wholesale of coffee, tea, cocoa and spices	420	435	435	3.6%
1039	Food	10390 Other processing and preserving of fruit and vegetables	345	380	415	20.3%
1051	Food	10511 Liquid milk and cream production; 10512 Butter and cheese production; and 10519 Manufacture of other milk products	305	325	340	11.5%
1082	Food	10821 Manufacture of cocoa and chocolate confectionery; and 10822 Manufacture of sugar confectionery	285	315	325	14.0%
1011	Food	10110 Processing and preserving of meat	295	310	320	8.5%
1020	Food	10200 Processing and preserving of fish, crustaceans and molluscs	330	330	315	-4.5%

SIC Class	Industry	Description	No. of SMEs (2011)	No. of SMEs (2012)	No. of SMEs (2013)	Change 2011-13 (%)
1091	Food	10910 Manufacture of prepared feeds for farm animals	245	240	245	0.0%
1052	Food	10520 Manufacture of ice cream	225	235	235	4.4%
1107	Food	11070 Manufacture of soft drinks; production of mineral waters and other bottled waters	215	225	220	2.3%
1072	Food	10720 Manufacture of risks and biscuits; manufacture of preserved pastry goods and cakes	195	200	210	7.7%
1092	Food	10920 Manufacture of prepared pet foods	145	140	130	-10.3%
1061	Food	10611 Grain milling; and 10612 Manufacture of breakfast cereals and cereals-based food	110	125	125	13.6%
1084	Food	10840 Manufacture of condiments and seasonings	110	105	115	4.5%
1101	Food	11010 Distilling, rectifying and blending of spirits	85	95	105	23.5%
1012	Food	10120 Processing and preserving of poultry meat	120	80	85	-29.2%
1085	Food	10850 Manufacture of prepared meals and dishes	70	70	85	21.4%
1103	Food	11030 Manufacture of cider and other fruit wines	60	65	65	8.3%
1041	Food	10410 Manufacture of oils and fats	45	50	60	33.3%
4635	Food	46350 Wholesale of tobacco products	60	65	60	0.0%
1083	Food	10831 Tea processing; and 10832 Production of coffee and coffee substitutes	65	55	55	-15.4%
1032	Food	10320 Manufacture of fruit and vegetable juice	30	45	50	66.7%
1031	Food	10310 Processing and preserving of potatoes	45	35	45	0.0%
1086	Food	10860 Manufacture of homogenized food preparations and dietetic food	35	30	40	14.3%
1102	Food	11020 Manufacture of wine from grape	25	25	30	20.0%

SIC Class	Industry	Description	No. of SMEs (2011)	No. of SMEs (2012)	No. of SMEs (2013)	Change 2011-13 (%)
1073	Food	10730 Manufacture of macaroni, noodles, couscous and similar farinaceous products	15	15	15	0.0%
1106	Food	11060 Manufacture of malt	10	5	10	0.0%
1104	Food	11040 Manufacture of other non-distilled fermented beverages	0	0	5	n/a
1042	Food	10420 Manufacture of margarine and similar edible fats	5	0	0	-100.0%
1062	Food	10620 Manufacture of starches and starch products	5	0	0	-100.0%
1081	Food	10810 Manufacture of sugar	0	0	0	n/a
		Total	**73,070**	**73,750**	**73,505**	**+0.6%**
	Food (non-retail)	**Total**	**20,835**	**20,965**	**21,325**	**+2.4%**
	Food (retailers only)	**Total**	**52,235**	**52,785**	**52,180**	**-0.1%**

- 71% of SMEs in the Food sector are retailers.
- The 73,505 SME businesses in the Food sector account for 3.4% of the registered SMEs in the UK.

By far the largest class among food retailers are “generalist” stores that do not specialise in particular types of food or drink. Of specialist stores, those offering meat products comprise the second largest class of SMEs.

Beyond retail, though there is no single dominant class within the sector, the largest number of SMEs consistently fall within SIC 4634 (including the ‘Wholesale of fruit and vegetable juices, mineral water and soft drinks’ and the ‘Wholesale of wine, beer, spirits and other alcoholic beverages’). This class has also seen significant growth in the number of SMEs (of 8.8%) between 2011 and 2013.

Overall, the non-retail side of the sector has seen a 2.4% increase in the number of registered SMEs between 2011 and 2013. Of the most sizable business functions,

the ‘Manufacture of beer’ (SIC 1105) has seen business numbers grow by 32.7% over the period.

7.2 Structure

As of 2012, the food and drink economy of the UK contributed a Gross Value Added of over £90bn to the UK economy, sub-divided as follows:

- **Food and Drink Retailing**: £26.0bn (29%)
- **Food and Drink Manufacturing**: £25.2bn (28%)
- **Non-Residential Catering**: £21.9bn (25%)
- **Food and Drink Wholesaling**: £8.5bn (10%)
- **Agriculture and Fishing**: £7.5bn (8%)[91]

The food and drink manufacturing sector is the largest manufacturing industry in the UK, employing 15.6% of the UK’s overall manufacturing workforce. As of 2013 it had an annual turnover of £76bn.

- The sector is dominated by SMEs, which account for 95.6% of food and drink manufacturing businesses, although this proportion varies between different sub-sectors (the bread, biscuits and cakes and meat manufacturing sectors contain a very high proportion of SMEs; the dairy sector, however, is considerably more consolidated).[92]

- Grant Thornton research from 2011 found that there was a 32% increase in food and drink micro-companies (one to nine employees) over the period 2005-2011.[93] Over the same period, there was considerable consolidation

[91] Defra (2012), ‘Food Statistics Pocketbook 2012,’ p.15. See http://webarchive.nationalarchives.gov.uk/20130123162956/http:/www.defra.gov.uk/statistics/files/defra-stats-foodfarm-food-pocketbook-2012-130104.pdf

[92] Arthur D. Little (2013), ‘Mapping current innovation and emerging R&D needs in the food and drink industry required for sustainable economic growth: Appendices,’ p.39. http://www.adlittle.co.uk/uploads/tx_extthoughtleadership/ADL_farmgate_appendices.pdf

[93] Grant Thornton (2011), ‘Sustainable Growth in the Food and Drink Manufacturing Industry,’ p.26. http://www.fdf.org.uk/corporate_pubs/Grant_Thornton_full_report_2011.pdf

among large companies in the sector, which led to 41% of food and drink SMEs losing customers (particularly in the retail sector).[94]

- Although it has a high proliferation of SMEs, the UK food and drink manufacturing industry is more consolidated than those in mainland Europe.

    - In the UK, 84% of UK companies in the food sector are micro and small (i.e. employ no more than 49 employees). In France and Italy, micro and small businesses account for around 98-99% of companies.
    - 11% of UK companies are medium sized (50-250 employees) compared to 1% in Italy and 2% in France
    - 5% are large companies (with over 250 employees), compared to 0.2% for Italy and 0.5% for France[95]

The retail and raw materials processing sides of the industry are much more consolidated than manufacturing (i.e. dominated by larger companies).[96] The food and drink retail sector in 2013 was valued at over £170bn.[97] It is dominated (in terms of sales volumes) by the major supermarkets (Asda; Tesco; Sainsbury; etc.).

- Research published by food and consumer research and training charity IGD in 2013 found that by 2018, 75% of the UK's food retail business growth will be concentrated among online retailing (e.g. Graze, but also online orders from large supermarkets), convenience stores (including independent SMEs, but also small-scale stores such as Tesco Extra that are operated by established multinational retailers) and discount chains (principally Aldi and Lidl).

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[94] Grant Thornton (2011), 'Sustainable Growth in the Food and Drink Manufacturing Industry,' p.28. http://www.fdf.org.uk/corporate_pubs/Grant_Thornton_full_report_2011.pdf

[95] Grant Thornton (2011), 'Sustainable Growth in the Food and Drink Manufacturing Industry,' p.26. http://www.fdf.org.uk/corporate_pubs/Grant_Thornton_full_report_2011.pdf

[96] 80% of the retail sector in food and drink is represented by four companies. Arthur D. Little (2013), 'Mapping current innovation and emerging R&D needs in the food and drink industry required for sustainable economic growth,' p.16. http://www.adlittle.com/downloads/tx_adlreports/ADL_farmgate_report.pdf

[97] See http://www.theguardian.com/business/2013/sep/12/uk-online-grocery-sales-forecast-to-double-retail-shakeup

- In contrast, large “big box” supermarket environments were reported as being likely to experience more sluggish growth over the period 2014-18 (8.2%), reflecting ongoing changes in retailing and consumption habits (Albeit the major supermarkets will remain the site in which the majority of food purchases in the UK| are made).[98]

7.3 Challenges

According to research undertaken by Arthur D. Little in 2013, the following act as barriers to innovation among SMEs in the sector:

- Obtaining capital funding for technological innovation, particularly regarding scaling-up and turn-key plant.
- A shortage of appropriately skilled staff, particularly the ability to attract highly-qualified scientists and engineers.
- Some cultural barriers (e.g. evidence that food manufacturers focus on “fire-fighting” short term requests from retailers and consumers, rather than the longer-term development of technology).
- Consumer habits in an era of squeezed incomes (both a cultural reluctance to move away from familiar products and buying habits, and a reluctance to pay a premium for products that use new technology, along with the perceived health and safety risks associated with novel food products).
- A lack of collaboration within the supply chain with regard to using collective approaches to solve technological problems.[99]

The Technology Strategy Board has also identified a number of barriers to innovation within the food sector, as follows:

- Fragmentation of the supply chain, with a slow spread of ideas

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[98] See http://www.theguardian.com/business/2013/sep/12/uk-online-grocery-sales-forecast-to-double-retail-shakeup

[99] Arthur D. Little (2013), ‘Mapping current innovation and emerging R&D needs in the food and drink industry required for sustainable economic growth,’ p.9. http://www.adlittle.com/downloads/tx_adlreports/ADL_farmgate_report.pdf. According to this research, the five core drivers of technological innovation in the UK food industry are: the increasing cost of raw materials; Increasing price consciousness among consumers; an increasing focus on diet and health among consumers; increasing competition within the industry; and demand for increased convenience of food.

- Significant skill shortages
- Conservatism, particularly among SMEs in primary food production
- Slow uptake of ideas from other areas of industry.[100]

Although the Arthur D. Little research focused on large-scale producers, it reported that technological innovation amongst SMEs was driven by similar factors, although SMEs were more strongly influenced by a wider range of drivers including regulation associated with food labelling and quality (which are expected to become much tighter in the wake of recent concerns with unlabelled food ingredients) and consumer demand for healthier food also featuring strongly.[101]

A weak export economy is a further challenge. 90% of SMEs in the industry do not currently export and those that do predominantly target neighbouring European markets.[102] The government and major food federations in the UK aim to increase exporting among SMEs in the food sector.[103]

- UK food and drink exports have grown by 61% over the last 5 years.[104] From 2011 to 2013, export sales among UK food and drink companies grew by 15%, compared to total food and drink sales growth of only 3%. FDF data shows that for businesses that do proactively expand into new markets, exports account for at least 20% of turnover, compared to an average of only 5% or less for those that exported reactively.[105]

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[100] Technology Strategy Board (2013), 'Delivery Plan: Financial Year 2013-2014,' p.38. https://www.innovateuk.org/documents/1524978/2138994/Delivery+Plan+-+Financial+year+2013-14/c435471d-222c-4e63-8269-d0f4b2b61c2f

[101] Arthur D. Little (2013), 'Mapping current innovation and emerging R&D needs in the food and drink industry required for sustainable economic growth,' p.22. http://www.adlittle.com/downloads/tx_adlreports/ADL_farmgate_report.pdf. See also 'After the Horsemeat Scandal can SMEs in the food industry regain consumer trust?' BM Magazine, March 26 2013. http://www.bmmagazine.co.uk/columns/opinion/16324/after-the-horsemeat-scandal-can-smes-in-the-food-industry-regain-consumer-trust/

[102] http://www.scotlandfoodanddrink.org/news/article-info/4664/new-action-plan-to-help-1000-uk-food-and-drink-firms-get-export-success.aspx

[103] 'Driving Export Growth in the Farming, Food and Drink Sector: A Plan of Action 2012,' p.2. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69488/pb13702-food-export-actionplan.pdf

[104] https://www.gov.uk/government/news/launch-of-week-to-inspire-small-food-and-drink-businesses-to-export

[105] https://www.gov.uk/government/news/launch-of-week-to-inspire-small-food-and-drink-businesses-to-export

Sustainability is a final challenge; the Food and Drink Federation's five-fold environmental ambition includes various aims concerning the landfilling of food and packaging waste, the reduction of CO_2 emissions.[106]

7.4 Government initiatives

The 2012 Food and Drink International Action Plan (developed by Defra, UKTI and the farming, food and drink industry) aspires to:

- encourage more SMEs to explore overseas opportunities and supporting those who already export to do more
- shift the focus of the sector towards the opportunities of emerging economies where there is the greatest future growth potential[107]

Overall, the Plan aims to deliver a £500m boost to the UK economy. SME growth is a key aim of the Plan and several food SMEs are profiled within it as examples of companies that have both innovated and have developed strong export business (e.g. Hawkshead Relish; Belvoir Fruit Farms).

The Plan was jointly devised between Government and industry after six months of consultation. It is being delivered by UK Trade & Investment (UKTI) and the Department for Environment, Food and Rural Affairs (Defra) and revolves around championing the sector overseas in order to facilitate trade, rather than the funding streams for innovation seen in Aerospace and Automotives.[108] It includes a range of short-term actions (e.g. developing export information dissemination tools and appointing a new Business Trade Ambassador to promote the excellence of the farming, food and drink sector internationally) as well as longer-term actions such as overhauling the export health certification for animal and animal products.[109]

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[106] https://www.fdf.org.uk/environment_progress_report.aspx

[107] Driving Export Growth in the Farming, Food and Drink Sector: A Plan of Action 2012,' p.4. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69488/pb13702-food-export-actionplan.pdf

[108] http://www.scotlandfoodanddrink.org/news/article-info/4664/new-action-plan-to-help-1000-uk-food-and-drink-firms-get-export-success.aspx

[109] Driving Export Growth in the Farming, Food and Drink Sector: A Plan of Action 2012,' pp.4-5. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69488/pb13702-food-export-actionplan.pdf

8 Healthcare

8.1 Definition, sector size and statistical trends

The Healthcare sector comprises 17 four-digit SIC classes in their entirety, covering all the business functions within SIC class Q ('Human health and social work activities'), but also including additional SIC classes relating to the manufacture and/or wholesale of medical supplies and pharmaceutical products.

There is no dedicated SIC code that covers the 'manufacture of medical devices/technology'. Hence, because these business functions are likely to be spread across a range of SIC codes that are non-specific to the medical sector, it is not possible to gauge the number of SMEs involved.

According to the ONS data, the number of registered SMEs within each of the Healthcare-related classes for the years 2011-13 was as follows (listed in descending order according to the number of SMEs in 2013):

SIC Class	Industry	Description	No. of SMEs (2011)	No. of SMEs (2012)	No. of SMEs (2013)	Change 2011-13 (%)
8899	Healthcare	88990 Other social work activities without accommodation n.e.c.	15,505	15,905	16,035	3.4%
8621	Healthcare	86210 General medical practice activities	15,030	15,825	15,495	3.1%
8690	Healthcare	86900 Other human health activities	11,475	13,395	14,575	27.0%
8891	Healthcare	88910 Child day-care activities	10,215	10,845	10,950	7.2%
8623	Healthcare	86230 Dental practice activities	10,530	10,900	10,760	2.2%
8810	Healthcare	88100 Social work activities without accommodation for the elderly and disabled	5,040	5,415	5,595	11.0%

SIC Class	Industry	Description	No. of SMEs (2011)	No. of SMEs (2012)	No. of SMEs (2013)	Change 2011-13 (%)
8730	Healthcare	87300 Residential care activities for the elderly and disabled	4,170	4,180	4,005	-4.0%
8790	Healthcare	87900 Other residential care activities n.e.c.	3,540	3,645	3,635	2.7%
8622	Healthcare	86220 Specialists medical practice activities	1,575	1,940	2,550	61.9%
8710	Healthcare	87100 Residential nursing care facilities	2,485	2,365	2,295	-7.6%
4646	Healthcare	46460 Wholesale of pharmaceutical goods	2,105	2,150	2,245	6.7%
8610	Healthcare	86101 Hospital activities; and 86102 Medical nursing home activities	1,785	2,030	1,950	9.2%
3250	Healthcare	32500 Manufacture of medical and dental instruments and supplies	1,800	1,785	1,755	-2.5%
8720	Healthcare	87200 Residential care activities for learning difficulties, mental health and substance abuse	515	530	565	9.7%
2120	Healthcare	21200 Manufacture of pharmaceutical preparations	280	300	310	10.7%
2110	Healthcare	21100 Manufacture of basic pharmaceutical products	125	145	165	32.0%
2660	Healthcare	26600 Manufacture of irradiation, electromedical and electrotherapeutic equipment	70	70	80	14.3%
			86,245	**91,425**	**92,965**	**7.8%**

As of 2013, the 92,965 companies within Healthcare account for 4.3% of the registered SMEs within the UK.

Of the six sectors of particular interest to BSI, Healthcare has seen the second highest growth – of 7.8% – in the number of registered SMEs between 2011 and 2013. Indeed, only three of the 17 SIC classes represented – 'Residential care activities for the elderly and disabled' (SIC 8730), 'Residential nursing care facilities' (SIC 8710) and 'Manufacture of medical and dental instruments and supplies' (SIC 3250) – have seen a fall in the number of SMEs over this period.

8.2 Overview

The healthcare sector in the UK consists of:

- Social care
- Medical technology
- Pharmaceuticals
- Medical biotechnology

Healthcare in the UK is dominated by the NHS, as a key customer for SMEs (particularly those involved in medical technology and pharmaceuticals) and as the main driver of the healthcare economy more widely.

8.3 Structure

8.3.1 Social care

According to research commissioned by Skills for Care, the adult social care economy in the UK is valued at an estimate £43bn.[110] Around 1.5m people are directly employed in adult social care; this represents 6.4% of the total workforce in England.[111] According to the Health and Safety Executive, the social care sector is dominated by SMEs (e.g. independent care homes), although does not provide precise figures for the numbers of SMEs involved in the sub-sector.[112]

The Kings Fund (an independent charity that informs policy and practice in the UK healthcare sector) has pointed toward a likely rise in demand for social care services over the coming decades as the UK faces the challenge of an ageing population. The proportion of people older than 60 years will increase from around 23 per cent in 2010 to 31 per cent by 2060, and 34 per cent by 2085. The proportion of people older than 75 years is likely to more than double, from around

[110] http://www.communitycare.co.uk/2013/03/15/adult-social-care-sector-in-england-contributes-43bn-to-economy/#.UvzoWfuROuI

[111] This means more people are employed in social care in the UK than in either construction or food.

[112] See http://www.hse.gov.uk/aboutus/meetings/hseboard/2012/290212/pfebb1219a.pdf. Vitae, a professional development association for the postgraduate research community, has noted that *"SMEs make up the majority of private sector care providers, and they are rapidly expanding, offering residential care, housing, fostering and adoption services. There are many private organisations that offer more specialist services, e.g. for hard-to-place children."* See http://www.vitae.ac.uk/researchers/417731/Social-work-and-welfare-useful-links-and-news-sources.html

8 per cent in 2010 to 17.5 per cent by 2085 (Office for National Statistics 2012). These changes are likely to drive greater demand for social care services.[113] A search of careindustrynews.co.uk, an online news source for the independent care industry in the UK, demonstrates considerable expansion activity within the sector, although cuts to local authority budgets are reported as impacting upon sectors (this is affecting larger care home providers as much as SMEs).[114]

Due to the nature of social care, there are no distinct geographical clusters and SMEs can be found all over the UK.

8.3.2 Medical technology

BIS defines medical technology as companies whose major business activity involves the development, manufacture, or distribution of medical devices as defined by European Union Medical Devices Directive (93/42/ECC).[115] This includes such technologies as:

- Wound care and management
- In-vitro diagnostic devices
- Drug delivery
- Cardiovascular and vascular devices.

According to government research from 2012, the UK medical technology sector contains over 3,000 companies, more than 80% of which are SMEs (note that the figures presented in section 8.1 indicate a smaller medical technology market than this; however, this may be accounted for by medical technology companies being assigned SIC codes other than 32500).[116]

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[113] The King's Fund (2013), 'Spending on health and social care over the next 50 years: Why think long term?', p.44. http://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/Spending%20on%20health%20...%2050%20years%20low%20res%20for%20web.pdf

[114] See http://www.careindustrynews.co.uk/care-business/

[115] HM Government (2012), 'Strength and Opportunity 2012: The landscape of the medical technology, medical biotechnology, industrial biotechnology and pharmaceutical sectors in the UK,' p.4. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/36736/12-p90-strength-and-opportunity-2012.pdf

[116] HM Government (2012), 'Strength and Opportunity 2012: The landscape of the medical technology, medical biotechnology, industrial biotechnology and pharmaceutical sectors in the UK,' p.4.

- The UK medical technology sub-sector is a net exporter.
- It employs nearly over 70,000 people.
- It has a combined annual turnover of £16bn.[117]

There was a 1% increase in turnover and 4% increase in employment in medical technology between 2011 and 2012.

- 65% of companies in the sub-sector are over 10 years old (65%);
- Only 1% are younger than 2 years old (i.e. it is comprised largely of small but well established companies).[118]

Within medical technology in the UK:

- Companies producing **single use technology** (e.g. syringes) formed the largest segment within medical technology by turnover (£1,786m).
- This was followed by professional services, wound care and management and in-vitro diagnostic technology.
- Together, these four segments had a combined sales turnover of near £5bn in 2011; this was almost a third of the UK's total medical technology turnover.

The highest levels of employment in the medical technology sector are found in professional services and consultancy, with 7,900 employees. This is followed by employment in single use technologies, which employs over 5,000 people.

- Medical technology SMEs are geographically dispersed across the UK; however, there is strong clustering in the West Midlands, the East Midlands

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https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/36736/12-p90-strength-and-opportunity-2012.pdf

[117] HM Government (2012), 'Strength and Opportunity 2012: The landscape of the medical technology, medical biotechnology, industrial biotechnology and pharmaceutical sectors in the UK,' p.4. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/36736/12-p90-strength-and-opportunity-2012.pdf

[118] HM Government (2012), 'Strength and Opportunity 2012: The landscape of the medical technology, medical biotechnology, industrial biotechnology and pharmaceutical sectors in the UK,' p.4. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/36736/12-p90-strength-and-opportunity-2012.pdf

and the East of England. These three regions collectively host 44% of all medical technology companies in the UK.[119]

8.3.3 Pharmaceuticals

The UK pharmaceutical sector (research-based companies producing drugs using a range of technologies, companies producing generic pharmaceuticals, providing clinical research, or contract manufacturing organisations) has a combined turnover of £30bn and employment of just below 70,000 people.[120] It is top-heavy, with the majority of the world's leading pharmaceutical corporations (e.g. Pfizer; Glaxo SmithKline; Novartis) having significant manufacturing and/or R&D facilities in the UK.[121] 59% of UK pharmaceutical employees work for one of these global companies, reflecting strong consolidation within this sub-sector.

The number of pharmaceutical SMEs has grown since 2011, notably in the manufacture of basic pharmaceutical products (a rise of 32% since 2011).

- Most SMEs in UK pharmaceuticals are involved in small molecule drug development, followed by companies who are specialist suppliers and those involved in therapeutic proteins.
- Turnover in the therapeutic proteins segment has grown in recent years (turnover up by 8% in 2011 alone), although specialist services have shown a gradual decline in turnover over the last 2 to 3 years.[122]

[119] HM Government (2012), 'Strength and Opportunity 2012: The landscape of the medical technology, medical biotechnology, industrial biotechnology and pharmaceutical sectors in the UK,' p.4. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/36736/12-p90-strength-and-opportunity-2012.pdf

[120] HM Government (2012), 'Strength and Opportunity 2012: The landscape of the medical technology, medical biotechnology, industrial biotechnology and pharmaceutical sectors in the UK,' p.31. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/36736/12-p90-strength-and-opportunity-2012.pdf

[121] http://www.abpi.org.uk/industry-info/knowledge-hub/uk-economy/Pages/leading-corporations.aspx

[122] HM Government (2012), 'Strength and Opportunity 2012: The landscape of the medical technology, medical biotechnology, industrial biotechnology and pharmaceutical sectors in the UK,' p.31. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/36736/12-p90-strength-and-opportunity-2012.pdf

According to the Association of the British Pharmaceutical Industry (ABPI), pharmaceuticals has the highest trade surplus of any industry in the UK and is major contributor of GVA to the economy.[123]

While most UK regions host some pharmaceutical companies, the South East, East of England and London together have the highest number of sites and employees in the sector and there are well-recognised clusters within these regions. Significant concentrations of activity can also be found in the Northwest, Yorkshire and the Northeast.

- The Northwest and Northeast show a higher proportion of manufacturing infrastructure and capability.
- The central belt of Scotland has a focus on biomedical research, which supports a cluster of pharmaceutical companies.[124]

8.3.4 Medical biotechnology

The **medical biotechnology** sector in the UK (which was analysed by Marketwise Strategies in previous research for BSI) is comprised of 979 companies, employs close to 26,000 individuals and generates a turnover of £3.7bn. It has a very high concentration of SMEs (98% of all companies in this sub-sector are SMEs).

For further details about the SME landscape within this sub-sector, we would refer BSI to our previous study from 2013, particularly Phase One.[125]

In much of the literature, medical biotechnology is regarded as an extension of (and supplier to) the pharmaceutical industry; this can create some conceptual confusion with regard to classifying the number of SMEs in the pharmaceutical sector.

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[123] ABPI (2010), 'The pharmaceutical industry's contribution to the UK economy and beyond,' p.5. http://www.abpi.org.uk/about-us/objectives/Documents/UK%20economy%20and%20beyond.pdf

[124] HM Government (2012), 'Strength and Opportunity 2012: The landscape of the medical technology, medical biotechnology, industrial biotechnology and pharmaceutical sectors in the UK,' p.7. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/36736/12-p90-strength-and-opportunity-2012.pdf

[125] Marketwise Strategies (2013), 'SMEs and Emerging Technologies: Interim Research Report,' pp.64-88.

8.4 Challenges

There is likely to be significant growth potential for the **global medical technology market** in the future because of an ageing world population, and a combination of growing populations and expanding health coverage in emerging markets (e.g. China; India; South America). BIS expects that global growth in the medical technology market over the next five years will be greater than in the pharmaceutical market (particularly with regard to the rapidly-growing markets in neurology, plastic surgery and opthalmics, although in-vitro diagnostics will remain the leading technology market). This is suggestive of significant export opportunities for SMEs in this area.

However, research by Quotec in 2010 identified a number of barriers to successful innovation among medical technology SMEs, including:

- Commercial pitfalls (e.g. unrealistic assessments of market size);
- Financial pitfalls (e.g. under-estimating the time and cost of product development);
- Development pitfalls (e.g. insufficient analysis of competing products).[126]

The Strategy for UK Life Sciences reports that the growing cost of R&D in the medical sector poses particular challenges for SMEs, which can struggle to find means of funding this adequately.[127] BIS has identified a need for better business and leadership skills among those managing medical technology SMEs in order to better establish relationships with NHS clinicians to drive domestic markets for goods.[128]

The Technology Strategy Board has identified further barriers to innovation in medical technology and in pharmaceuticals:

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[126] Quotec (2010), 'Commercialising Medical Devices: A Guise for UK-Based Small Companies ,' pp.45-46. http://www.quotec.co.uk/attachments/article/37/Commercialising%20Medical%20Devices.pdf

[127] Department for Business, Innovation and Skills (2011), 'Strategy for UK Life Sciences,' p.26. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32457/11-1429-strategy-for-uk-life-sciences.pdf

[128] Department for Business, Innovation and Skills (2012), 'UK Trade Performance Across Markets and Sectors,' p.63. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32475/12-579-uk-trade-performance-markets-and-sectors.pdf

- A regulatory environment designed to protect patients, leading to longer development compared to other technology sectors;
- The conservative nature of patient care, limiting the adoption of new technologies (as can the fragmented nature of procurement);
- The pace of technology innovation outstripping the ability of users to adapt to the way healthcare is delivered.[129]

With regard to **exports**, the government has estimated that that the OECD and BRIC nations will increase spending on healthcare by 50% between 2010 and 2020 to $7.5 trillion, creating significant opportunities for UK firms.[130] The healthcare sector has a strong recent history of growing exports; UK exports of healthcare equipment grew by a total of 81% from 2002 to 2008. Both the number of UK healthcare equipment exporters and the average value exported by each firm rose substantially, especially among those exporting to the BRICs.[131]

- In pharmaceuticals, opportunities are likely to be concentrated in advanced R&D for global markets, rather than manufacturing. With regard to SMEs, this, according to BIS, is likely to involve "high-end" SMEs that are spun out from universities.[132]

A recently-announced UK/Chinese healthcare agreement (with a value of £120mn) indicates the shape of some of these opportunities, with UK investment in China as follows:

- Heythorp Healthcare signing a Memorandum of Understanding with Jiangsu Far East (Yadong) to develop a flagship, mixed use healthcare facility to

[129] Technology Strategy Board (2013), 'Delivery Plan: Financial Year 2013-2014,' p.38. https://www.innovateuk.org/documents/1524978/2138994/Delivery+Plan+-+Financial+year+2013-14/c435471d-222c-4e63-8269-d0f4b2b61c2f

[130] https://www.gov.uk/government/news/multimillion-boost-to-uk-economy-as-healthcare-trade-deals-with-china-sealed

[131] Department for Business, Innovation and Skills (2012), 'UK Trade Performance Across Markets and Sectors,' p.67. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32475/12-579-uk-trade-performance-markets-and-sectors.pdf

[132] Department for Business, Innovation and Skills (2012), 'UK Trade Performance Across Markets and Sectors,' p.64. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32475/12-579-uk-trade-performance-markets-and-sectors.pdf

include elderly nursing, specialist dementia services and care training within China;

- Healthcare UK signing a Memorandum of Understanding with the CITIC Trust and Circle Partnership to unlock commercial deals for UK companies in areas such as primary care services, integrated care and education and training.

- IXICO has signed a Memorandum of Understanding with the Beijing Union Medical and Pharmaceutical General Corporation to support dementia diagnosis, advance public understanding of dementia and evaluate new treatments.[133]

Within **domestic markets**, selling into the NHS has long been a major challenge faced by SMEs in the healthcare economy.[134] In 2011, the Council for Science and Technology found that there was a lack of specialist procurement expertise within the NHS, leading to conservative choices and a tendency to procure from "known" providers, making it difficult for SMEs to become visible in the NHS supply chain.

8.5 Government initiatives

There are a number of initiatives underway that aim to assist SMEs in the healthcare sector, particularly with regard to ensuring that SMEs have better access to NHS markets.

- The Strategy for UK Life Sciences, which aspires for the UK to become the global hub for innovative life sciences in the future, including:

    - £310m of investment to support the discovery, development and commercialisation of research (£130m for Stratified Medicines and £180m for a Biomedical Catalyst Fund);

[133] https://www.gov.uk/government/news/multimillion-boost-to-uk-economy-as-healthcare-trade-deals-with-china-sealed

[134] Council for Science and Technology (2011), 'The NHS as a Driver for Growth: A report by the Prime Minister's Council for Science and Technology,' p.3. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/226719/11-1096-nhs-driver-for-growth.pdf

- Through the TSB, £10m per annum invested in a Cell Therapy Technology and Innovation Centre (TIC),based in London
- MHRA to proactively highlight to SMEs regulatory tools that can support patient access to innovative breakthrough products. This is particularly in light of a recognition that smaller companies can face barriers with regard to funding research (both accessing research funding, but also being aware of the existing research grants and other funding streams available).[135]

- NHS England is currently redefining its 3millionlives programme (an initiative to develop telehealth and remote care services in England, and to deliver these to 3 million people by 2017) in order to secure greater input from SMEs. Most notably, it has redesigned its Stakeholder Forum to allow much greater inclusion of SMEs alongside NHS commissioners, NHS providers, housing, social care and industry representatives (previously, this forum was dominated by larger social care providers).[136]

- A key current objective for **NHS Supply Chain** is to improve SME engagement with the NHS, recognising SMEs' capacity to supply innovative and cost-effective products and services. As of Spring 2013, 79% of NHS Supply Chain contracts included SMEs as awarded suppliers (representing 28% of sales across NHS Supply Chain's full contract portfolio).[137]

[135] Department for Business, Innovation and Skills (2011), 'Strategy for UK Life Sciences,' p.28. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32457/11-1429-strategy-for-uk-life-sciences.pdf

[136] http://www.ehi.co.uk/news/ehi/8996/smes-key-to-redefining-3millionlives

[137] http://www.supplychain.nhs.uk/news/company/nhs-supply-chain-discussed-s/~/media/Files/News/US1477%20SME%20Parliamentary%20Brief%20-%20FINAL.ashx

9 ICT

9.1 Definition, sector size and statistical trends

The ICT sector is comprised of 26 four-digit SIC classes in their entirety. There are no additional classes that only partially cover ICT-related business activities.

Based on the ONS data, the number of registered SMEs within each ICT class for the years 2011-13 was as follows (listed in descending order according to the number of SMEs in 2013):

SIC Class	Industry	Description	No. of SMEs (2011)	No. of SMEs (2012)	No. of SMEs (2013)	Change 2011-13 (%)
6202	ICT	62020 Information technology consultancy activities	65,775	67,950	70,650	7.4%
6201	ICT	62011 Ready-made interactive leisure and entertainment software development; and 62012 Business and domestic software development	18,355	25,345	28,820	57.0%
6209	ICT	62090 Other information technology service activities	22,135	21,300	19,625	-11.3%
5911	ICT	59111 Motion picture production activities; 59112 Video production activities; and 59113 Television programme production activities	11,295	12,470	13,455	19.1%
6190	ICT	61900 Other telecommunications activities	4,915	5,330	5,355	9.0%
5814	ICT	58141 Publishing of learned journals; and 58142 Publishing of consumer and business journals and periodicals	2,680	2,890	2,930	9.3%

SIC Class	Industry	Description	No. of SMEs (2011)	No. of SMEs (2012)	No. of SMEs (2013)	Change 2011-13 (%)
6311	ICT	63110 Data processing, hosting and related activities	2,710	2,865	2,905	7.2%
5819	ICT	58190 Other publishing activities	2,720	2,680	2,730	0.4%
5920	ICT	59200 Sound recording and music publishing activities	2,145	2,385	2,590	20.7%
5912	ICT	59120 Motion picture, video and television programme post-production activities	2,255	2,200	2,235	-0.9%
6399	ICT	63990 Other information service activities n.e.c.	1,735	1,910	2,180	25.6%
5811	ICT	58110 Book publishing	2,185	2,100	2,070	-5.3%
5829	ICT	58290 Other software publishing	1,775	1,690	1,635	-7.9%
6312	ICT	63120 Web portals	1,090	1,285	1,385	27.1%
6110	ICT	61100 Wired telecommunications activities	790	1,035	1,205	52.5%
6020	ICT	60200 Television programming and broadcasting activities	705	885	995	41.1%
6120	ICT	61200 Wireless telecommunications activities	605	785	925	52.9%
6010	ICT	60100 Radio broadcasting	905	905	915	1.1%
6391	ICT	63910 News agency activities	785	750	705	-10.2%
5913	ICT	59131 Motion picture distribution activities; 59132 Video distribution activities; and 59133 Television programme distribution activities	515	550	560	8.7%
6203	ICT	62030 Computer facilities management activities	210	270	380	81.0%
5813	ICT	58130 Publishing of newspapers	380	370	355	-6.6%
5914	ICT	59140 Motion picture projection activities	205	200	215	4.9%
6130	ICT	61300 Satellite telecommunications activities	135	140	160	18.5%
5821	ICT	58210 Publishing of computer games	95	105	100	5.3%
5812	ICT	58120 Publishing of directories and mailing lists	55	50	90	63.6%

SIC Class	Industry	Description	No. of SMEs (2011)	No. of SMEs (2012)	No. of SMEs (2013)	Change 2011-13 (%)
		Total	**147,155**	**158,445**	**165,170**	**12.2%**

As of 2013, the 165,170 registered SMEs in ICT account for 7.7% of the UK total.

Of the six sectors that BSI wishes to focus on, ICT has seen the greatest growth. More than 18,000 net SMEs, or 12.2, were added to the sector between 2011 and 2013. Notably, what is now the second most important SIC class in terms of number of ICT SMEs – 6201, covering 'Ready-made interactive leisure and entertainment software development' and 'Business and domestic software development' – grew by 57.0% to add more than 10,000 enterprises over the period.

According to the Technology Strategy Board, the UK ICT sector has collective revenues of more than £137bn.[138] ONS figures indicate over 1.3mn people employed in the ICT industry in the UK.[139]

Recent from the National Institute of Economic and Social Research (NIESR) has suggested that these numbers may be conservative and that there could be as many as **270,000** ICT companies in the UK, particularly as many businesses classified by SIC as "other" appear to be engaged in digital-related forms of business (these figures were based on an analysis of "big data" to determine the core business functions of various businesses classified in SIC as "Other").[140] However, these NIESR figures are somewhat speculative, using a new methodology for classifying the primary business function of companies that is not currently used either by BIS or the ONS.

9.2 Overview

UKTI defines ICT as an umbrella term that includes all technologies for the manipulation and communication of information.[141] It has been one of the fastest

[138] https://www.innovateuk.org/information-communication-technology

[139] http://opentoexport.com/article/the-uk-ict-market-software-cloud-data-centres-and-cyber-security-1/

[140] National Institute of Economic and Social Research (2013), 'Measuring the UK's Digital Economy with Big Data,' p.5. http://niesr.ac.uk/sites/default/files/publications/SI024_GI_NIESR_Google_Report12.pdf

[141] http://www.ukti.gov.uk/export/sectors/ict.html

growing sectors of the UK economy for over ten years and is heavily clustered in urban areas, particularly London.[142] Sub-sectors of the ICT sector include [:

- **Software and IT**: According to UKTI, the UK is Europe's leading market for software and IT services with a market value of £58 billion per annum. The UK is home to over 100,000 specialist software companies and all the major global software companies such as Microsoft, IBM and HP have major operations within the UK. The UK attracts £930mn per annum of software R&D investment from international businesses.[143] Over the financial year 2010-11, the UK attracted one third of Foreign Direct Investments in Europe within the software sector (over half of which was invested in the London area).[144]

- **Cloud Computing and Data**: The UK data centre market is estimated by UKTI to be the second biggest in the world after the West Coast of the US, and was valued in 2011 as being worth in excess of $3.35bn.[145]

- **Cyber security**: UKTI values the UK cyber security market at around £2.8 billion. Mobile phone security is expected to be one of the largest markets over the next 2/3 years.[146]

- **Communications**: UKTI estimates the UK telecommunications market at £45 billion, with 250,000 people employed across 8,000 companies. Almost £2bn is invested in R&D in the UK communications industry UK annually (e.g. wireless technologies, Next Generation networks, core infrastructure systems and hardware).[147]

- **Electronics and IT Hardware**: The industry directly contributes in excess of £16 billion to the UK GDP and provides direct employment for over 300,000 people in 12,000 companies.[148]

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[142] http://www.ukti.gov.uk/export/sectors/ict.html

[143] http://opentoexport.com/article/the-uk-ict-market-software-cloud-data-centres-and-cyber-security-1/

[144] Greater London Authority Intelligence Unit (2012), 'London's Digital Economy,' p.7. http://www.london.gov.uk/sites/default/files/digital-economy-2012.pdf

[145] http://opentoexport.com/article/the-uk-ict-market-software-cloud-data-centres-and-cyber-security-1/

[146] http://opentoexport.com/article/the-uk-ict-market-software-cloud-data-centres-and-cyber-security-1/

[147] http://www.ukti.gov.uk/investintheuk/sectoropportunities/communications.html

[148] http://www.ukti.gov.uk/investintheuk/sectoropportunities/electronicsithardware.html

- **Mobile content, E-commerce, and Games Industry**: The UK games industry is clustered around ten regional centres (Edinburgh, Dundee, Newcastle, Liverpool, Manchester, Guildford, Cambridge, Oxford, London and Brighton).[149]

9.3 Structure

NIESR research completed in 2013 found that the digital economy (combining ICT and the digital content sectors) was highly concentrated in a few locations around the UK:

- London has the largest concentration of ICT SMEs of any UK region,
- Manchester, Birmingham, Brighton and locations in the Greater South East (such as Reading and Crawley) also feature in the top 10 locations for ICT businesses in the UK.

The UK digital economy is particularly concentrated in the areas to the West of London, such as Basingstoke, Newbury and Milton Keynes. Areas like Aberdeen and Middlesbrough also show high concentrations of digital economy activity.[150]

The NIESR research (2013) found that the ten areas (defined as Travel to Work Areas) with the highest number of digital companies (ICT, but also digital content companies, calculated using a different methodology than using SIC codes alone) were as follows:

- London (64,630 companies),
- Manchester (7,324),
- Guildford and Aldershot (6,158),
- Luton and Watford (5,147),
- Wycombe and Slough (4,979),
- Birmingham (4,695),
- Reading and Bracknell (4,914),

[149] http://www.ukti.gov.uk/investintheuk/sectoropportunities/creativemedia.html

[150] National Institute of Economic and Social Research (2013), 'Measuring the UK's Digital Economy with Big Data: Short Version,' p.4. http://niesr.ac.uk/sites/default/files/files/PDF/SI024_GI_LSE_Google_Report_Shortversion2.pdf

- Bristol (4,714),
- Crawley (3,867)
- Brighton (3,730)

These figures are based on NIESR's effort to classify the digital economy beyond individual SIC codes; however, the research notes that the same ten TTWA locations feature as the ten leading locations for the digital sector even if conventional SIC codes pertaining to digital alone are used. Overall, NIESR has found that around 80% of ITC companies are located in urban areas (i.e. a city of at least 125,000 people).[151]

According to research undertaken by the Greater London Authority Intelligence Unit, London contains more ICT and software companies than any other city in Europe.[152]

Table 7: ICT/software companies in European cities (2010)[153]

City	Number of ICT and software companies
London	23,740
Paris	15,510
Milan	9,154
Madrid	8,387
Stockholm	6,827
Amsterdam	6,824
Brussels	6,255
Berlin	6,027
Munich	5,435
Budapest	5,039

[151] National Institute of Economic and Social Research (2013), 'Measuring the UK's Digital Economy with Big Data,' pp.26-27. http://niesr.ac.uk/sites/default/files/publications/SI024_GI_NIESR_Google_Report12.pdf

[152] Greater London Authority Intelligence Unit (2012), 'London's Digital Economy,' p.6. http://www.london.gov.uk/sites/default/files/digital-economy-2012.pdf

[153] Source: Greater London Authority Intelligence Unit (2012), 'London's Digital Economy,' p.7. http://www.london.gov.uk/sites/default/files/digital-economy-2012.pdf

The largest cluster of digital SMEs is found in inner East London, focused on Shoreditch and Clerkenwell ("Tech City").[154]

- In 2012 there were 3,200 SME digital businesses in Inner East London, employing 48,000.[155]
- However, employment growth in the Inner East London digital sector was much slower after 2005, compared with significant acceleration over the period 1997-2005.[156]

9.4 Challenges

The TSB regards ICT as presenting multiple business opportunities for new devices, the processing of a rapidly increasing volumes of data, secure cloud systems and new approaches to software engineering.[157] Whilst noting that barriers to innovation in ICT are generally low compared with those in advanced manufacturing or electronics, the TSB has identified the following challenges:

- The problem created by advances in computer hardware being extremely rapid, and an inability of software developers to "keep up" (therefore, new software can become obsolete or superseded extremely quickly, or else does not fully utilise the capacity unlocked by processing technology);
- Concerns about the 'cloud', particularly around security and data preservation.

[154] Max Nathan, Emma Vandore and Rob Whitehead (2012), 'A Tale of Tech City: The Future of Inner East London's Digital Economy: Report for Centre for London,' p.15. http://www.demos.co.uk/files/A_Tale_of_Tech_City_web.pdf?1340965124

[155] Max Nathan, Emma Vandore and Rob Whitehead (2012), 'A Tale of Tech City: The Future of Inner East London's Digital Economy: Report for Centre for London,' p.15. http://www.demos.co.uk/files/A_Tale_of_Tech_City_web.pdf?1340965124

[156] Max Nathan, Emma Vandore and Rob Whitehead (2012), 'A Tale of Tech City: The Future of Inner East London's Digital Economy: Report for Centre for London,' p.19. http://www.demos.co.uk/files/A_Tale_of_Tech_City_web.pdf?1340965124

[157] Technology Strategy Board (2012), 'Enabling Technologies Strategy 2012-2015,' p.6. https://www.innovateuk.org/documents/1524978/2139688/Enabling+technologies+-+Strategy+2012-2015/c11ba6fd-435c-4230-a3ed-4b6c29f2582a

- Issues regarding quality of output across the sector, given the variety of potential developers that can participate, including hobbyists, and the divergent quality of software that can result.[158]

The TSB has also noted a lack of skills in the UK in programming in general, with specific weaknesses in multi-core and low-powered environments.[159]

9.5 Government initiatives

Government initiatives for ICT include:

- The £10mn **Connected Digital Economy Catapult**, which aims to commercialise innovation in the ICT sector, particularly among SMEs.[160] One of its current projects is the 5G demonstrator, the first large-scale platform test for 5G telecoms in the world.

- The **Technology Strategy Board Enabling Technologies Strategy** contains a number of proposed actions as part of the **Digital Economy Action Plan**; this includes a series of small business support plans that provide funding for innovative SMEs on a competitive basis.[161]

- The Government is in the initial stage of developing a future digital communications infrastructure strategy, which aims to design a long-term plan for building even faster broadband networks, supporting the roll-out of IPv6 Internet addresses and developing 5G based Mobile Broadband technology. This is a core part of the effort to keep the country's national infrastructure up-to-date for the next 10 – 15 years and beyond. An interim report is due to be published in July 2014 and that will then become the

[158] Technology Strategy Board (2012), 'Enabling Technologies Strategy 2012-2015,' p.5. https://www.innovateuk.org/documents/1524978/2139688/Enabling+technologies+-+Strategy+2012-2015/c11ba6fd-435c-4230-a3ed-4b6c29f2582a

[159] Technology Strategy Board (2012), 'Enabling Technologies Strategy 2012-2015,' p.21. https://www.innovateuk.org/documents/1524978/2139688/Enabling+technologies+-+Strategy+2012-2015/c11ba6fd-435c-4230-a3ed-4b6c29f2582a

[160] https://cde.catapult.org.uk/

[161] Technology Strategy Board (2013), 'Delivery Plan: 2013-2014,' p.49. https://www.innovateuk.org/documents/1524978/2138994/Delivery+Plan+-+Financial+year+2013-14/c435471d-222c-4e63-8269-d0f4b2b61c2f

subject of a further consultation before the final report is published in December 2014.[162] It is currently unclear how this might impact on SMEs in the sector, although SME growth has been a strong component of action plans in the other sectors analysed for this research (it is therefore reasonable to suggest that this will also be a focus of the forthcoming plan for the ICT sector).

- In addition, the government Tech City strategy for Inner East London is:

    - To foster SME ICT businesses in the area;
    - To promote international investment into Tech City;
    - To encourage its spread eastwards to the Olympic Park.[163]

[162] See https://connect.innovateuk.org/web/ictktn/article-view/-/blogs/government-review-of-digital-communications-infrastructure-strategy?p_p_auth=fUjQGN86&_33_redirect=https%3A%2F%2Fconnect.innovateuk.org%2Fweb%2Fictktn%2Farticles%3Bjsessionid%3D66451678A76F400286D941E4C46CFB26.2%3Fp_p_id%3D101_INSTANCE_okNClW6dT09i%26p_p_lifecycle%3D0%26p_p_state%3Dnormal%26p_p_mode%3Dview%26p_p_col_id%3Dcolumn-1%26p_p_col_count%3D1

[163] Max Nathan, Emma Vandore and Rob Whitehead (2012), 'A Tale of Tech City: The Future of Inner East London's Digital Economy: Report for Centre for London,' p.17. http://www.demos.co.uk/files/A_Tale_of_Tech_City_web.pdf?1340965124

10 Key Findings

10.1 SMEs in the UK economy

10.1.1 Overview

Of the 4.9mn businesses in the UK, **SMEs** account for:

- 99.9 per cent of all private sector businesses in the UK,
- 59.3 per cent of private sector employment,
- 48.1 per cent of private sector turnover,
- 14.4 million employees (small businesses alone accounted for 47 per cent of private sector employment and 33.1 per cent of turnover),
- A combined turnover of £1,600 billion.

ONS data indicates that there are **2,158,665 registered SMEs** in the UK. The number of **unregistered** SMEs is in the region of 2.7 million.

Of the 4,872,690 UK SMEs, just over three-quarters (75.1%) are single-person businesses with **no employees**. The majority of these (55.9% of total SMEs) are also **unregistered**.

In almost all sector, the largest proportion of SMEs are unregistered businesses with no employees.

- In two sectors, Agriculture, Forestry and Fishing (A) and Real Estate Activities (L) the largest number of SMEs are *registered* businesses with no employees,
- In Accommodation and Food Service Activities (I), the largest number of SMEs have 2-4 employees.

Among the 4,872,690 SMEs in the UK:

- the largest sector (by SIC section) is 'Construction' (F), which accounts for 18.3% of the total population (890,560 businesses),

- this is followed by ‘Professional, Scientific and Technical Activities’ (M) and ‘Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles’ (G)

The largest proportion of UK SMEs (17.2%, or 839,515 businesses) are in London, with the South East (16.2%; 789,515 businesses) closely behind

- Wales, the North East and Northern Ireland have the lowest proportion of SMEs in the UK with fewer than 3% of the SME stock each.

10.1.2 Regional breakdown by SIC category

Of the main sectors of the UK economy (i.e. the broad categories into which SIC codes fit):

- The **South West** has the UK’s greatest concentration of SMEs in ‘Agriculture, Forestry and Fishing’ (SIC section A), accounting for 16.1% of the UK SMEs in that sector. **Scotland** accounts for over a quarter of registered SMEs in ‘Forestry and logging’ (division 02) and almost half of those in ‘Fishing and aquaculture’ (03).

- The greatest number of SMEs in SIC sections B, D and E (‘Mining and Quarrying; Electricity, Gas, Steam and Air Conditioning Supply; Water Supply; Sewerage, Waste Management and Remediation Activities’) are in the **North West** (15.8%) and the **East of England** (14.2%).

- Manufacturing SMEs (SIC section C) have the greatest presence in the **South East** (13.7%) and **North West** (11.9%). Manufacturing consists of a large number of companies and ONS data gives an indication of different regions’ strengths.

- The biggest concentrations of SMEs in ‘Construction’ (SIC section F) are in the **South East** (15.7%) and **London** (14.1%). ONS data for registered SMEs indicates that London has a particular focus of SMEs engaged in the ‘Construction of buildings’ (SIC division 41), with 17.5% of the UK total. The **South East** and **East of England** have the highest numbers of registered SMEs in ‘Civil engineering’ (division 42) and ‘Specialised construction activities’ (division 43).

- SMEs in the 'Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles' (SIC section G) are most numerous in **London** (14.9%) and the **South East** (14.1%).

- After London (17.1%), the largest number of 'Transportation and Storage' (H) SMEs are in the **North West**.

- SMEs working in 'Accommodation and Food Service Activities' (I) are most numerous in **London** (14.2%), the **South East** (12.0%) and the **North West** (11.6%).

- Of all the SIC sections, 'Information and Communication' (J) SMEs are among the most concentrated in one part of the country. 27.4% of SMEs are in **London**, with a further 19.3% in the **South East**. Some business activities are even more focused on **London**, including 'Motion picture, video and television programme production, sound recording and music publishing activities' and 'Programming and broadcasting activities'.

- There is a strong south of England focus for 'Financial and Insurance Activities' SMEs (K), with 27.5% based in **London**, 19.4% in the **South East**, and 14.8% in the **East of England**. ONS data for registered SMEs reveals some regional variation in distribution by business activity, however. The **North West**, for example, dominates in 'Insurance, reinsurance and pension funding, except compulsory social security'.

- 'Real Estate Activities' SMEs (L) have the highest representation in **London** (23.3%), the **South East** (16.2%) and the **South West** (8.7%).

- SMEs in 'Professional, Scientific and Technical Activities' (M) are most concentrated in **London** (21.5%), the **South East** (20.5%) and the **East of England** (10.4%). Activities particularly concentrated in **London** are 'Advertising and market research' and 'Legal and accounting activities'.

- 'Administrative and Support Service Activities' SMEs (N) are most numerous in **London** (18.8%), the **South East** (16.6%) and the **East of**

England (10.9%). Travel agency, tour operator and other reservation service and related activities' are especially concentrated in **London**.

- 'Education' SMEs (P) are concentrated in the **South East** (18.8%) and **London** (18.4%).

- SMEs in 'Human Health and Social Work Activities' (Q) – comprising a large part of the Healthcare sector – are most numerous in **London** (17.3%), the **South East** (16.6%) and the **North West** (11.5%). **London** and the **South East** have the highest number of registered SMEs in all three divisions (86 'Human health activities', 87 'Residential care activities' and 88 'Social work activities without accommodation', though the **South West** is also strong (12.0% of the division's registered SMEs) in 'Residential care activities'.

- 'Arts, Entertainment and Recreation' (R) is the sector with the greatest proportion of SMEs in a single region (27.6% of the total, in **London**). **London's** dominance is especially marked in 'Creative, arts and entertainment activities' (SIC division 90), where it accounts for 43.6% of registered SMEs.

- SMEs engaged in 'Other Service Activities' (S) are most numerous in the **South East** (16.2%), **London** (12.6%) and the **East of England**.

10.2 Aerospace

The aerospace sector is one of the most successful manufacturing sectors in the UK economy. It has a 17% global market share of aerospace industry revenues, making the UK's civil aerospace industry is the largest in Europe and second largest in the world.

The 2,375 companies in the aerospace (as of 2013) comprise 0.1% of the UK's registered SMEs. The total number of SMEs in the sector has grown by 0.6% between 2011 and 2013. The South West, North West and East Midlands have the highest numbers of aerospace employees in the country.

The UK aerospace sector is divided into two similarly-sized sub-sectors:

- Civil aerospace, whose growth is expected to accelerate in the next two to three years as a result of growing international orders;
- Defence aerospace, which has fared less well in recent years as a result of austerity approaches to public spending in the UK and elsewhere.

The sector consists of around 6 OEMs, with companies at Tier-One, Tier-Two and below supplying these with parts and components.

The sector has a strong and 'joined up' industrial strategy, which renders the UK an attractive location for new international investment in civil aerospace. The UK has a strong comparative advantage in the development and production of: wings; engines; aero structures; advanced systems.

Rising global demand could generate over £474 billion in orders for UK companies, particularly from Asia, the Middle East and South America. UK aerospace SMEs already have a proven track record as suppliers to the global aviation industry.

Core **challenges** faced by the sector are:

- Ensuring that UK SMEs are able to adapt to substantially different product and manufacturing technologies (e.g. Additive Manufacturing; Plastic Electronics) that are likely to be used to produce the next generation of aircraft.
- New orders in the defence aerospace sub-sector falling due to a reduction in defence orders as Governments continue to make budget cuts.
- High R&D costs, challenges in accessing funding, and elements of complacency among tier-two and lower companies, meaning a lack of innovation at these levels of the supply chain.

Key **government initiatives** in aerospace include:

- The Strategic Vision for UK Aerospace, launched July 2012.
- The Aerospace Growth Partnership (AGP), a unique partnership between Industry and Government that has created a shared vision for the UK Civil Aerospace sector for the next 15 years and beyond.

- The **Aerospace Technology Institute** (ATI), created with £2 billion of funding to help develop new technologies for the aerospace industry.
- The **UK Aerodynamics Centre**, a £60 million state-of-the-art aerodynamics research centre to achieve a step change in the UK's capability in complex aerodynamics.
- The **National Aerospace Technology Exploitation Programme (NATEP)**, which supports smaller companies to innovate in products and manufacturing techniques.
- The creation of **500 new Masters level graduate places** through joint industry and government bursary funding.

10.3 Automotives

In 2011 the UK automotive sector produced over 1.4 million cars and 2.5 million engines, exporting in excess of 80% of its production. There is an expectation that it will be producing some 2 million vehicles by 2015. The sector generates around £50 billion in annual turnover and has recovered from recession, with production of both cars and commercial vehicles up 12% over the first half of 2012.

- As of 2013, the 70,200 companies within Automotive account for 3.3% of the SMEs within the UK. Of those, by far the largest number are engaged in the 'Maintenance and repair of motor vehicles' (SIC 4520).
- The total number of SMEs in the sector grew by 1.5% over the two-year period 2011 to 2013.
- There is clustering in the West Midlands, Northern Ireland, the Leeds-Bradford area and Humberside.

The UK automotive supply chain typically generates £4.8bn of added value annually. About 80% of all component types required for vehicle assembly operations can be procured from UK suppliers.

The sector is structured in a manner very similar to Aerospace, with multiple tiers. Supply chains of OEMs are typically split by commodity (e.g. sub-frames, exhausts, radiators and trim/bodywork is typically sourced from the UK, whereas electrical components tend to be sourced from the Far East).

The Automotive Council suggests that the three leading UK supply chain opportunities are in engine casing, steering systems and trim (door cards, headlining, and plastics).

The main challenges for automotive SMEs are:

- Barriers to growth, as follows:
    - Poor understanding of the automotive sector among banks and lenders, who often insist on personal securities as collateral for business loans, despite the sector's health.
    - Deteriorating credit conditions, and declining availability of credit
    - Lack of awareness of finance options among SME owner-managers, and a conservative approach to investment among some of these.

- A shortage of skilled workers and apprentices.

- Meeting the needs of rapidly growing UK-based OEMs (the Automotive Council has suggested that there are currently around £3bn of unfulfilled opportunities for OEMs to buy from the UK supply chain).

- Meeting the challenges posed by the unfolding **transition to low carbon transportation** and **new supply chain opportunities**. The Automotive Council estimates that by 2040 no new car manufactured in Europe will be powered solely by a petrol or diesel powertrain.

Key **government initiatives** in the automotive sector are:

- *Driving Success: UK automotive strategy for growth and sustainability*, a strategy for the future of the UK automotive industry over the next five years.
- The government and automotive industry investing £500 million each over the next ten years in an **Advanced Propulsion Centre** to research, develop and commercialise the technologies for the vehicles of the future.

10.4 Construction

Construction is one of the largest sectors of the UK economy, contributing almost £90 billion to the UK economy (or 6.7%) in value added, and comprises over 300,000 businesses covering some 2.93 million jobs (equivalent to about 10% of total UK employment). 14% of the UK's registered SMEs are in the Construction sector.

- There was a significant fall in the number of registered SMEs between 2011 and 2013 across several of the most sizable SIC classes (e.g. the number of SMEs engaged in the 'Construction of commercial and domestic buildings' (SIC 4120) fell by 6.0%, while the number of SMEs within 'Development of building projects' (SIC 4110) dropped 13.7%.
- However, the overall reduction in the number of SMEs was a more modest 1.2%, with the large falls in some classes offset by big increases in others (for example, an 18.5% increase in the number of registered SMEs engaged in 'Architectural activities' (SIC 7110) between 2011 and 2013).

The sector was heavily impacted by the recession. However, recent data has shown pick-up in the construction economy, with activity in January 2014 growing at the fastest rate since 2007.

The UK construction sector is characterised by **high levels of fragmentation** with 83% of firms employing no more than one person. There is a very high proportion of self-employment in the sector compared with mainland Europe.

- For a 'typical' large building project (i.e. the £20 - £25 million range) a main contractor may be directly managing around 70 sub-contracts of which a significant proportion are worth less than £50,000.

Key challenges facing construction SMEs are:

- Difficulties in accessing finance compared with other sectors (because lenders view construction SMEs as higher risk than SMEs elsewhere).
- **Low levels of innovation** compared with other sectors because of:
    - A strong culture of subcontracting
    - Concerns over product and professional liability
    - A culture of risk-aversion both among contractors and among consumers.

- Difficulties in winning work for major public sector contracts.
- Skills gaps (around 20% of vacancies in construction are hard to fill).
- Driving export growth in a sector that has historically supplied domestic markets, particularly among construction contractors (among whom only 6% export at present). Worldwide demand for green buildings, mass housing and world-class architecture could collectively increase exports three-fold by 2025. However, this is likely to require cultural change within a sector that has historically overwhelmingly served domestic markets.

The Government's Industrial Strategy for Construction aims to narrow the trade gap in the UK construction industry by doubling exports. There are also various initiatives to deregulate planning laws in an effort to increase both residential and commercial building in the UK.

10.5 Food

The 73,505 SME businesses in the Food sector account for 3.4% of the registered SMEs in the UK. If retail is stripped out of this figure, the remaining 21,325 enterprises account for 1.0% of registered SMEs.

By far the largest class among food retailers are "generalist" stores that do not specialise in particular types of food or drink. Of specialist stores, those offering meat products comprise the second largest class of SMEs.

Outside of retail, the largest number of SMEs consistently fall within SIC 4634 (including the 'Wholesale of fruit and vegetable juices, mineral water and soft drinks' and the 'Wholesale of wine, beer, spirits and other alcoholic beverages'). This class has also seen significant growth in the number of SMEs (of 8.8%) between 2011 and 2013.

- Overall, the sector saw a 0.6% increase in the number of registered SMEs between 2011 and 2013, although if retailers are removed from these figures then the remainder of the sector grew its SME base by 2.4% over this period.
- Of the most sizable business functions, the 'Manufacture of beer' (SIC 1105) has seen business numbers grow by 32.7% over the period.

As of 2013, the food and drink manufacturing industry generated an annual turnover of £76bn. It is the largest manufacturing industry in the UK.

- SMEs account for 95.6% of food and drink manufacturing businesses, although this varies between different sub-sectors (the bread, biscuits and cakes and meat manufacturing sectors contain a very high proportion of SMEs, whilst the dairy sector is considerably more consolidated).
- The retail and raw materials processing sides of the industry are much more consolidated.

Barriers to innovation among SMEs in the food industry are:

- Obtaining capital funding for technological innovation.
- A shortage of appropriately skilled staff.
- Some cultural barriers.
- Consumer habits in an era of squeezed incomes.
- A lack of collaboration within the supply chain with regard to using collective approaches to solve technological problems.

90% of SMEs in the industry do not currently export and those that do predominantly target neighbouring European markets. UK food and drink exports have, however, grown by 61% over the last 5 years.

Sustainability is a major challenge within this sector; the Food and Drink Federation's five-fold environmental ambition includes various aims concerning the landfilling of food and packaging waste, the reduction of CO_2 emissions.

The 2012 Food and Drink International Action Plan (developed by Defra, UKTI and the farming, food and drink industry) aims to:

- encourage more SMEs to explore overseas opportunities and supporting those who already export to do more
- shift the focus of the sector towards the opportunities of emerging economies where there is the greatest future growth potential

The Plan was jointly devised between Government and industry after six months of consultation.

10.6 Healthcare

The 92,965 companies within Healthcare account for 4.3% of the registered SMEs within the UK. Healthcare saw a 7.8% increase in the number of registered SMEs between 2011 and 2013. Only three of the 17 SIC classes represented in the sector have seen a fall in the number of SMEs over this period.

The healthcare sector in the UK consists of:

- **The social care economy**: The adult social care economy in the UK is valued at an estimate £43bn. More are employed in this specific sector than in construction and food and drink. The social care sector is dominated by SMEs, located throughout the UK.

- **Medical technology**: This sub-sector contains over 3,000 companies, more than 80% of which are SMEs. Its combined annual turnover is £16bn and growing. There is strong clustering in the West Midlands, the East Midlands and the East of England. There is likely to be significant growth potential for the **global medical technology market** in the future because of an ageing world population, and a combination of growing populations and expanding health coverage in emerging markets (e.g. China; India; South America).

- **Pharmaceuticals**: Most SMEs operating in the UK pharmaceuticals industry are involved in small molecule drug development, followed by companies who are specialist suppliers and those involved in therapeutic proteins. While most UK regions host some pharmaceutical companies, the South East, East of England and London together have well-recognised clusters within these regions. Significant concentrations of activity can also be found in the Northwest, Yorkshire and the Northeast.

- **Medical biotechnology**: This is comprised of 979 UK companies, employing close to 26,000 individuals and generates a turnover of £3.7bn. 98% of all companies in this sub-sector are SMEs.

Barriers to successful innovation among medical technology SMEs include:

- The growing cost of R&D;.
- A regulatory environment designed to protect patients, leading to longer development compared to other sectors;
- The conservative nature of patient care, limiting the adoption of new technologies;
- The fragmented nature of procurement;
- The pace of technology innovation outstripping the ability of users to adapt to the way healthcare is delivered.

Domestically, selling into the NHS is a major challenge faced by SMEs.

Government initiatives that aim to assist SMEs in the healthcare sector include:

- The Strategy for UK Life Sciences, which aspires for the UK to become the global hub for innovative life sciences in the future.

- NHS England's overhaul of the 3millionlives programme (an initiative to develop telehealth and remote care services in England, and to deliver these to 3 million people by 2017) in order to secure greater input from SMEs.

- Changes to the objective of the **NHS Supply Chain**, which now aspires to improve SME engagement with the NHS.

10.7 ICT

As of 2013, the 165,170 registered SMEs in ICT account for 7.7% of the UK total. However, recent research from the National Institute of Economic and Social NIESR Research has suggested that there could be as many as **270,000** ICT companies in the UK.

ICT has seen more than 18,000 net SMEs (an increase of 12.2%) added between 2011 and 2013. Notably, what is now the second most important SIC class in terms of number of ICT SMEs – 6201, covering 'Ready-made interactive leisure and entertainment software development' and 'Business and domestic software development' – grew by 57.0% to add more than 10,000 enterprises over the period.

- Around 80% of ITC companies are located in urban areas (i.e. a city of at least 125,000 people).
- London has by far the highest concentration of ICT companies in the UK, and the highest concentration of such companies in the whole of Europe.
- The UK digital economy is also concentrated in the areas to the West of London, such as Basingstoke, Newbury and Milton Keynes. Areas like Aberdeen and Middlesbrough also show high concentrations of digital economy activity.

Barriers to innovation in ICT are lower than in other sectors; core challenges are:

- An inability of software developers to "keep up" with rapid advances in hardware
- Concerns about the data security of the 'cloud'.
- Maintaining quality of output across the sector, given the variety of potential developers that can participate.
- A lack of skills in the UK in programming in general, with specific weaknesses in multi-core and low-powered environments.

Government initiatives for ICT include:

- The £10mn **Connected Digital Economy Catapult**, which aims to commercialise innovation among SMEs.
- The **Technology Strategy Board Enabling Technologies Strategy**, which contains a number of proposed actions for the SME ICT economy.
- The Government's forthcoming digital communications infrastructure strategy.

11 Implications for Stage Two research

11.1 Sector choice

The six sectors researched have experienced a rapid return to growth after the recession, although at different rates. Aerospace and Automotive were only mildly impacted by the recession and returned to consistent growth in 2012. Even Construction, which was the most severely-affected of any of the six sectors researched, appears to be returning to growth in 2014.

- All are evidently sectors that are either very large (Construction is the largest sector in the UK economy by number of SMEs), or high-value (Aerospace is one of the UK's most successful manufacturing sectors, although small in comparison to the other sector researched).

- All have a high proportion of SMEs, although these are not always uniformly spread:

    - The "typical" size of an SME differs between sectors, and those with the most fragmented supply chains tend to see a proliferation of micro-businesses. In Construction, around 83% of all companies consist of sole traders or companies employing only one person. In Food Manufacturing, however, companies tended to have more than10 employees.

    - Geographical clustering is evident in some sectors, although not in others. ICT is very heavily clustered in urban areas, particularly London; aerospace and automotives also have some distinct geographical epicentres. Social care SMEs, however, are spread more evenly around the UK because of the nature of their service.

    - Within individual sectors, there are also differences in the proportion of SMEs within sub-sectors (e.g. in healthcare, the pharmaceuticals industry is top-heavy and dominated by multi-nationals, whereas the medical technology sub-sector is dominated by SMEs)

- They are sectors in which there are a range of government-led initiatives to grow innovation and export, and which are recognised as key sectors in the economy

- All six sectors have a focus on innovation and on export, particularly Aerospace. Even those sectors where exporting is less common (e.g. Food) there are industry-led plans to increase exports among SMEs as a key driver of future growth.

On this basis we recommend that the six sectors researched continue to be the basis for the research going forward as all show evidence of a growing and high-value SME-led supply chain. However, given their size, the choice of companies for inclusion in the survey and interviews at Stage Two interview will need to be carefully managed.

11.2 Implications for Sampling

Other than Aerospace, each of the six sectors has well in excess of 100,000 SMEs that could be researched. Clearly, there will need to be a careful selection of SMEs in order to choose appropriate companies so that each sector is appropriately represented. We anticipate further discussion with BSI in order to refine the parameters for sampling.

- We are exploring the option of purchasing data from a broker such as Experian or Dun and Bradstreet to complete the **600-strong telephone survey** of SMEs. We have entered into discussion with our survey partner, Feedback Market Research, about the most appropriate steps forward to ensure a good sample of SMEs across the six sectors.

For the interviews it will be necessary to achieve a good spread of companies in each sector by:

- Size (some micro, some small and some medium)
- Sub-sectoral focus (e.g. in Construction – both architects and construction contractors; in healthcare, social care, medical technology and pharmaceutical SMEs will be researched)
- Tiers, where Tiers exist (i.e. Aerospace and Automotive)
- Geography.

Appendix: SIC Codes and Sectors of Focus

Industry (SIC section) and corresponding sectors of focus	SIC division and class	Description	Business functions relating to six sectors of focus
A Agriculture, Forestry and Fishing	**01**	Crop and animal production, hunting and related service activities	
B Mining and Quarrying	**05**	Mining of coal and lignite	
Construction	0811		08110 Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate
Construction	0812		08120 Operation of gravel and sand pits; mining of clays and kaolin
Construction	0990		09900 Support activities for other mining and quarrying
C Manufacturing	**10 Food**	Manufacture of food products	
Food	1011		10110 Processing and preserving of meat
Food	1012		10120 Processing and preserving of poultry meat
Food	1013		10130 Production of meat and poultry meat products
Food	1020		10200 Processing and preserving of fish, crustaceans and molluscs
Food	1031		10310 Processing and preserving of potatoes
Food	1032		10320 Manufacture of fruit and vegetable juice
Food	1039		10390 Other processing and preserving of fruit and vegetables
Food	1041		10410 Manufacture of oils and fats
Food	1042		10420 Manufacture of margarine and similar edible fats
Food	1051		10511 Liquid milk and cream production; 10512 Butter and cheese production; and 10519 Manufacture of other milk products
Food	1052		10520 Manufacture of ice cream
Food	1061		10611 Grain milling; and 10612 Manufacture of breakfast cereals and cereals-based food
Food	1062		10620 Manufacture of starches and starch products
Food	1071		10710 Manufacture of bread; manufacture of fresh pastry goods and cakes
Food	1072		10720 Manufacture of rusks and biscuits; manufacture of preserved pastry goods and cakes
Food	1073		10730 Manufacture of macaroni, noodles, couscous and similar farinaceous products

Industry (SIC section) and corresponding sectors of focus	SIC division and class	Description	Business functions relating to six sectors of focus
Food	1081		10810 Manufacture of sugar
Food	1082		10821 Manufacture of cocoa and chocolate confectionery; and 10822 Manufacture of sugar confectionery
Food	1083		10831 Tea processing; and 10832 Production of coffee and coffee substitutes
Food	1084		10840 Manufacture of condiments and seasonings
Food	1085		10850 Manufacture of prepared meals and dishes
Food	1086		10860 Manufacture of homogenized food preparations and dietetic food
Food	1089		10890 Manufacture of other food products n.e.c.
Food	1091		10910 Manufacture of prepared feeds for farm animals
Food	1092		10920 Manufacture of prepared pet foods
Food	1101		11010 Distilling, rectifying and blending of spirits
Food	1102		11020 Manufacture of wine from grape
Food	1103		11030 Manufacture of cider and other fruit wines
Food	1104		11040 Manufacture of other non-distilled fermented beverages
Food	1105		11050 Manufacture of beer
Food	1106		11060 Manufacture of malt
Food	1107		11070 Manufacture of soft drinks; production of mineral waters and other bottled waters
Construction	1610		16100 Sawmilling and planing of wood
Construction	1621		16210 Manufacture of veneer sheets and wood-based panels
Construction	1622		16220 Manufacture of assembled parquet floors
Construction	1623		16230 Manufacture of other builders' carpentry and joinery
Healthcare	2110		21100 Manufacture of basic pharmaceutical products
Healthcare	2120		21200 Manufacture of pharmaceutical preparations
Construction	2223		22230 Manufacture of builders ware of plastic
Aerospace (part)	2229		22290 Manufacture of other plastic products
Construction	2311		23110 Manufacture of flat glass
Construction	2312		23120 Shaping and processing of flat glass
Construction	2331		23310 Manufacture of ceramic tiles and flags
Construction	2332		23320 Manufacture of bricks, tiles and construction products, in baked clay
Construction	2342		23420 Manufacture of ceramic sanitary fixtures
Construction	2351		23510 Manufacture of cement
Construction	2352		23520 Manufacture of lime and plaster
Construction	2361		23610 Manufacture of concrete products for construction purposes
Construction	2362		23620 Manufacture of plaster products for construction purposes
Construction	2363		23630 Manufacture of ready-mixed concrete
Construction	2364		23640 Manufacture of mortars
Construction	2365		23650 Manufacture of fibre cement
Construction	2369		23690 Manufacture of other articles of concrete, plaster and cement
Construction	2370		23700 Cutting, shaping and finishing of stone

Industry (SIC section) and corresponding sectors of focus	SIC division and class	Description	Business functions relating to six sectors of focus
Construction	2399		23990 Manufacture of other non-metallic mineral products n.e.c.
Construction	2511		25110 Manufacture of metal structures and parts of structures
Construction	2512		25120 Manufacture of doors and windows of metal
Construction	2521		25210 Manufacture of central heating radiators and boilers
Aerospace (part)	2540		25400 Manufacture of weapons and ammunition
Construction	2572		25720 Manufacture of locks and hinges
Aerospace (part)	2651		26511 Manufacture of electronic measuring, testing etc. equipment, not for industrial process control; and 26513 Manufacture of non-electronic measuring, testing etc. equipment, not for industrial process control (but not 26512 or 26514)
Healthcare	2660		26600 Manufacture of irradiation, electromedical and electrotherapeutic equipment
Construction	2733		27330 Manufacture of wiring devices
Construction	2740		27400 Manufacture of electric lighting equipment
Construction	2814		28140 Manufacture of taps and valves
Construction	2825		28250 Manufacture of non-domestic cooling and ventilation equipment
Aerospace (part)	2899		28990 Manufacture of other special-purpose machinery n.e.c.
Automotive	2910		29100 Manufacture of motor vehicles
Automotive	2920		29201 Manufacture of bodies (coachwork) for motor vehicles (except caravans); 29202 Manufacture of trailers and semi-trailers; and 29203 Manufacture of caravans
Automotive	2931		29310 Manufacture of electrical and electronic equipment for motor vehicles and their engines
Automotive	2932		29320 Manufacture of other parts and accessories for motor vehicles
Aerospace	3030		30300 Manufacture of air and spacecraft and related machinery
Automotive	3091		30910 Manufacture of motorcycles
Automotive	3092		30920 Manufacture of bicycles and invalid carriages
Automotive	3099		30990 Manufacture of other transport equipment n.e.c.
Healthcare	3250		32500 Manufacture of medical and dental instruments and supplies
Construction	3311		33110 Repair of fabricated metal products
D Electricity, gas, steam and air conditioning supply	**35**	Electricity, gas, steam and air conditioning supply	
E Water supply, sewerage, waste management and remediation activities	**36**	Water collection, treatment and supply	
F Construction	**41 Construction**	Construction of buildings	
Construction	4110		41100 Development of building projects
Construction	4120		41201 Construction of commercial buildings; and 41202 Construction of domestic buildings

Industry (SIC section) and corresponding sectors of focus	SIC division and class	Description	Business functions relating to six sectors of focus
Aerospace (part) & Construction	4211		42110 Construction of roads and motorways
Construction	4212		42120 Construction of railways and underground railways
Construction	4213		42130 Construction of bridges and tunnels
Construction	4221		42210 Construction of utility projects for fluids
Construction	4222		42220 Construction of utility projects for electricity and telecommunications
Construction	4291		42910 Construction of water projects
Construction	4299		42990 Construction of other civil engineering projects n.e.c.
Construction	4311		43110 Demolition
Construction	4312		43120 Site preparation
Construction	4313		43130 Test drilling and boring
Construction	4321		43210 Electrical installation
Construction	4322		43220 Plumbing, heat and air-conditioning installation
Construction	4329		43290 Other construction installation
Construction	4331		43310 Plastering
Construction	4332		43320 Joinery installation
Construction	4333		43330 Floor and wall covering
Construction	4334		43341 Painting; and 43342 Glazing
Construction	4339		43390 Other building completion and finishing
Construction	4391		43910 Roofing activities
Construction	4399		43991 Scaffold erection; and 43999 Other specialised construction activities n.e.c.
G Wholesale and retail trade; repair of motor vehicles and motorcycles	**45 Automotive**	Wholesale and retail trade and repair of motor vehicles and motorcycles	
Automotive	4511		45111 Sale of new cars and light motor vehicles; and 45112 Sale of used cars and light motor vehicles
Automotive	4519		45190 Sale of other motor vehicles
Automotive	4520		45200 Maintenance and repair of motor vehicles
Automotive	4531		45310 Wholesale trade of motor vehicle parts and accessories
Automotive	4532		45320 Retail trade of motor vehicle parts and accessories
Automotive	4540		45400 Sale, maintenance and repair of motorcycles and related parts and accessories
Construction	4613		46130 Agents involved in the sale of timber and building materials
Food	4631		46310 Wholesale of fruit and vegetables
Food	4632		46320 Wholesale of meat and meat products
Food	4633		46330 Wholesale of dairy products, eggs and edible oils and fats
Food	4634		46341 Wholesale of fruit and vegetable juices, mineral water and soft drinks; and 46342 Wholesale of wine, beer, spirits and other alcoholic beverages
Food	4635		46350 Wholesale of tobacco products

Industry (SIC section) and corresponding sectors of focus	SIC division and class	Description	Business functions relating to six sectors of focus
Food	4636		46360 Wholesale of sugar and chocolate and sugar confectionery
Food	4637		46370 Wholesale of coffee, tea, cocoa and spices
Food	4638		46380 Wholesale of other food, including fish, crustaceans and molluscs
Food	4639		46390 Non-specialised wholesale of food, beverages and tobacco
Healthcare	4646		46460 Wholesale of pharmaceutical goods
Aerospace (part)	4669		46690 Wholesale of other machinery and equipment
Construction	4673		46730 Wholesale of wood, construction materials and sanitary equipment
Construction	4674		46740 Wholesale of hardware, plumbing and heating equipment and supplies
H Transportation and storage	**49 Aerospace (part)**	Land transport and transport via pipelines	
Aerospace (part)	4939		49390 Other passenger land transport
Aerospace	5110		51101 Scheduled passenger air transport; and 51102 Non-scheduled passenger air transport
Aerospace	5121		51210 Freight air transport
Aerospace	5223		52230 Service activities incidental to air transportation
Aerospace (part)	5224		52242 Cargo handling for air transport activities (but not 52241 or 52243)
Aerospace (part)	5229		52290 Other transportation support activities
I Accommodation and food service activities	**55**	Accommodation	
Aerospace (part)	5629		56290 Other food services
J Information and communication	**58 ICT**	Publishing activities	
ICT	5811		58110 Book publishing
ICT	5812		58120 Publishing of directories and mailing lists
ICT	5813		58130 Publishing of newspapers
ICT	5814		58141 Publishing of learned journals; and 58142 Publishing of consumer and business journals and periodicals
ICT	5819		58190 Other publishing activities
ICT	5821		58210 Publishing of computer games
ICT	5829		58290 Other software publishing
ICT	5911		59111 Motion picture production activities; 59112 Video production activities; and 59113 Television programme production activities
ICT	5912		59120 Motion picture, video and television programme post-production activities
ICT	5913		59131 Motion picture distribution activities; 59132 Video distribution activities; and 59133 Television programme distribution activities
ICT	5914		59140 Motion picture projection activities
ICT	5920		59200 Sound recording and music publishing activities
ICT	6010		60100 Radio broadcasting

Industry (SIC section) and corresponding sectors of focus	SIC division and class	Description	Business functions relating to six sectors of focus
ICT	6020		60200 Television programming and broadcasting activities
ICT	6110		61100 Wired telecommunications activities
ICT	6120		61200 Wireless telecommunications activities
ICT	6130		61300 Satellite telecommunications activities
ICT	6190		61900 Other telecommunications activities
ICT	6201		62011 Ready-made interactive leisure and entertainment software development; and 62012 Business and domestic software development
ICT	6202		62020 Information technology consultancy activities
ICT	6203		62030 Computer facilities management activities
ICT	6209		62090 Other information technology service activities
ICT	6311		63110 Data processing, hosting and related activities
ICT	6312		63120 Web portals
ICT	6391		63910 News agency activities
ICT	6399		63990 Other information service activities n.e.c.
K Financial and insurance activities	**64**	Financial service activities, except insurance and pension funding	
L Real estate activities	**68**	Real estate activities	
M Professional, scientific and technical activities	**69**	Legal and accounting activities	
Construction	7111		71111 Architectural activities
Aerospace (part)	7120		71200 Technical testing and analysis
Construction (part)	7490		74901 Environmental consulting activities; and 74902 Quantity surveying activities (but not 74909)
N Administrative and support service activities	**77 Construction (part), Aerospace (part)**	Rental and leasing activities	
Construction	7732		77320 Renting and leasing of construction and civil engineering machinery and equipment
Aerospace	7735		77351 Renting and leasing of air passenger transport equipment
O Public administration and defence; compulsory social security	**84**	Public administration and defence; compulsory social security	
P Education	**85**	Education	
Q Human health and social work activities	**86 Healthcare**	Human health activities	
Healthcare	8610		86101 Hospital activities; and 86102 Medical nursing home activities
Healthcare	8621		86210 General medical practice activities
Healthcare	8622		86220 Specialists medical practice activities
Healthcare	8623		86230 Dental practice activities
Healthcare	8690		86900 Other human health activities
Healthcare	8710		87100 Residential nursing care facilities

Industry (SIC section) and corresponding sectors of focus	SIC division and class	Description	Business functions relating to six sectors of focus
Healthcare	8720		87200 Residential care activities for learning difficulties, mental health and substance abuse
Healthcare	8730		87300 Residential care activities for the elderly and disabled
Healthcare	8790		87900 Other residential care activities n.e.c.
Healthcare	8810		88100 Social work activities without accommodation for the elderly and disabled
Healthcare	8891		88910 Child day-care activities
Healthcare	8899		88990 Other social work activities without accommodation n.e.c.
R Arts, entertainment and recreation	**90**	Creative, arts and entertainment activities	
S Other service activities	**94**	Activities of membership organisations	
T Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	**97**	Activities of households as employers of domestic personnel	
U Activities of extraterritorial organisations and bodies	**99**	Activities of extraterritorial organisations and bodies	

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