

The modern UK industrial sector

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A case study about post-industrial employment in service industries

This unit covers the changes leading to the dominance of the service sector in the British economy. In the last 35 years the proportion of jobs in services has increased from 63% to 83% of the workforce. Over the same period manufacturing employment has fallen from 26% to 8% of workers. This is why we refer to the economy as ‘post industrial’. Nowadays, wealth in the UK is chiefly created through providing services at home and abroad.

The unit focuses on two case studies:

- Cambridge in East Anglia – the past 50 years have seen the development of many knowledge-based enterprises drawing on local academic expertise: internet technologies and software, mobile computing, telecoms, life sciences, pharmaceutical research and healthcare.
- Retailing and distribution – change has been dramatic in this dynamic and competitive service industry. The growth of superstores, retail parks, regional shopping malls and online sales have all had an impact on traditional shops. Now, recent developments are bringing new life to city centres and market towns.

Key vocabulary

post-industrial, workforce, knowledge-based, start-up, retail park, regional shopping centre, internet shopping

Learning outcome

In this unit you will:

- learn how the structure of UK industry has changed over time
- understand the importance of knowledge-based enterprises to the UK economy
- learn why service industries like retailing have become so dominant in UK employment.

Relevance to specifications

Exam board	Link to specification
AQA	Paper 2: Challenges in the human environment, Section B: The changing economic world, see page 20. Click here
Cambridge IGCSE	Theme 3: Economic development, Topic 3.1: Development, see page 12. Click here
Edexcel A	Component 2: The human environment, Topic 4: Changing cities, see pages 17–19. Click here
Edexcel B	Component 1: Global geographical issues, Topic 3: Challenges of an urbanising world, see pages 14–15. Component 2: UK geographical issues, Topic 5: The UK’s evolving human landscape, see pages 23–25. Click here
Edexcel IGCSE	Section B: People and their environments, Topic 4: Economic activity and energy, see page 9. Click here
Eduqas A	Component 2: Environmental and development issues, Theme 6: Development and resource issues, see page 19. Click here
Eduqas B	Component 1: Investigating geographical issues, Theme 1: Changing places – changing economies, see pages 10–11. Click here
OCR A	Component 1: Living in the UK today, 1.2 People of the UK, see page 7. Click here
OCR B	Component 2: People and society, Topic 7: UK in the 21st century, see page 14. Click here
WJEC A	Unit 2: Options, Theme 11: Retail and urban change, see page 20. Click here
WJEC B	Theme 1: Challenges of living in a built environment, Key idea 2: Access to services and changing service provision, see page 14. Theme 3: Uneven development and sustainable environments, Key idea 2: The location of economic activities, see page 20. Click here

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The changing structure of industry

In the last 30 years the UK has become a truly post-industrial society. Simply, most of us do not make things to earn a living. We provide services instead, either to other people, businesses, government and administration, or to manufacturing firms.

Traditionally, the types of job that people do have fallen into three categories:

- Primary industries involve the exploitation of natural resources.
- Secondary industries involve processing or making products.
- Tertiary industries provide services.

In the 20th century a fourth category was recognised:

- Quaternary industries are knowledge-based, often involving research and development (R&D).

Figure 1 shows the employment changes that have happened over the past 170 years. The figures are based on census information, collected every ten years. The graph shows that jobs in farming and fishing have gradually declined. Now less than 1% of people work in this sector. In the 19th century,

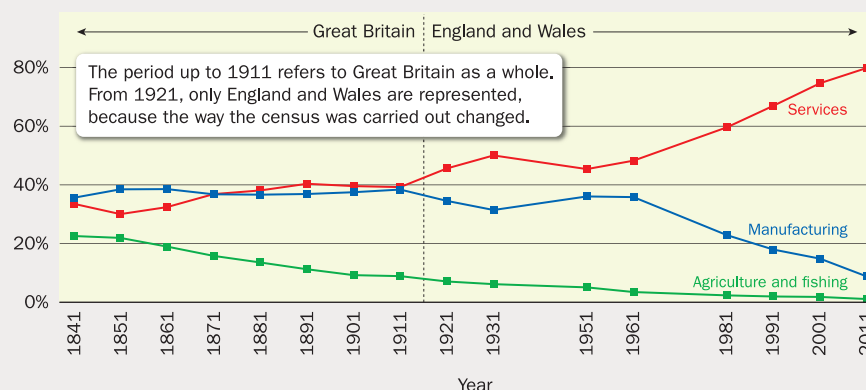


Figure 1 Employment structure in the UK, 1841–2011

when Britain's was known as 'the workshop of the world', manufacturing and services each employed about one-third of the workforce. After the First World War, services became more important as manufacturing declined during the Great Depression of the 1930s. Over the last 50 years, so many manufacturing jobs have been lost that it now accounts for less than 10% of the workforce. Today employment is dominated by services, with over 80% of the working population in tertiary and quaternary industries.

In 2015 the UK population was nearing 65 million, of whom just under half – 31.4 million – were in employment. This represented three-quarters of working age

people (16–64) and was the highest level since records began in 1971. Figures show that 1.7 million were unemployed (5% of working age people) and 8.9 million aged 16–64 were economically inactive, the lowest figure since 2003. Looking again at the 16–64 age group, 79% of men and 69% of women were in work, both figures being virtually the highest ever recorded.

During 2015 most types of employment registered marked rises, the highest category being professional, scientific and technical staff with an increase of 115 000. Only employment in public administration and defence dropped, with 40 000 jobs lost. In fact, public sector employment as a whole fell from 21% of the workforce in 2010 to 17% in 2015.

Cambridge – engine of economic growth

Cambridge, a rapidly expanding city, population 128 000, in East Anglia, is one of the national engines of economic growth. The term 'the Cambridge Phenomenon' is frequently used to describe the city's remarkable success in developing a high-tech industrial and research sector.

Known as 'Silicon Fen' or the 'Cambridge Cluster', it consists of over 4300 knowledge-based businesses in and around the city. Together they have an annual turnover of £11 billion and employ 58 000 people. Forty per cent of the Cambridge workforce has a higher education qualification, which is more than twice the national average. The diverse range of industries encompasses research and

development, software consultancy, bioscience, pharmaceuticals, high-value engineering, creative occupations and tourism.

Cambridge has many advantages as a centre of modern industry:

- It is located only 80 km north of Greater London, to which it is directly linked by two main roads, the M11 and A1(M). It also has mainline rail services to

London King's Cross and Liverpool Street stations, allowing commuters to reach the capital in under an hour. A second station serving North Cambridge and the Science Park is due to open in 2017. Cambridge airport provides scheduled commercial flights to Europe.

- Cambridge University, one of the top five in the world, is an educational hothouse that generates academic expertise and innovation. Graduates and university lecturers are closely linked with the city's high-tech industries and research establishments, providing a pool of highly skilled labour for commercial firms.
- The University Science Park was founded in 1970 and the St John's Innovation Centre in 1987 to provide accommodation and facilities for new firms and start-ups. The city also has the highest rate of successful start-ups in the country (Figure 2), with 50% still operating after five years.
- Addenbrooke's, a major teaching hospital on the southern edge of the city, is at the centre of the extensive Cambridge Biomedical Campus. The site already incorporates large laboratories for the Medical Research Council and Cancer Research UK, as well as many smaller research units. At present the new global headquarters for pharmaceutical giant AstraZeneca is under construction there, as is a state-of-the-art building for Papworth Hospital.
- The Greater Cambridge City Deal will potentially provide £500 million of government funding over the next 15 years to invest in housing, transport and jobs. Additional

ARM HOLDINGS: UK's leading technology company

Founded: 1990, as a joint venture between Acorn Computers and Apple

Original staff: 12 Acorn engineers + CEO

Business: Designs silicon chips (microprocessors) and graphics software

Worth: approximately £14 billion

Headquarters: Fulbourn Road, Cambridge

Staff: 3800 in total (1600 at Cambridge HQ) – includes employees from 23 European countries outside the UK

Output: 15 billion chips featuring its technology were manufactured in 2015. Half of these were for mobile devices, including the iPhone. The other half were for thousands of different products, giving a very diverse market.

Future developments: ARM is at the forefront of 'the internet of things'. Its work means that chips are much cheaper, smaller and more energy-efficient than before. This means they can be embedded into a wide range of everyday objects. Opportunities are growing to connect domestic devices and systems to the internet at both household and town levels. ARM is also working on automotive applications, using computing power in cars to make them smarter, safer and more fuel-efficient. The ultimate goal is the self-drive car, though this is still some years away. Increasingly powerful smartphones will extend internet access for people in developing countries, helping with healthcare and social problems. ARM is working with UNICEF, which is exploring the use of smartphone photos to diagnose illnesses.

July 2016: ARM sold to Japan's SoftBank for £24 billion. The new owner promises to double the UK staff over the next five years and to keep the firm's HQ in Cambridge.

Figure 2 About ARM

investment will be made available by the City and South Cambridgeshire councils and commercial firms involved in the developments.

- Cambridge offers a high quality of life in a historic setting, with a vibrant cultural scene.
- Cambridge is a major tourist destination, with over 5 million visitors a year, who are drawn by the historic university buildings and grounds along the River Cam (Figure 3). Currently 85% of tourists are on day trips but 'Visit Cambridge and Beyond', the tourism development body, is



Figure 3 Tourists in Cambridge
Source: Photo by Mike Morrish

encouraging longer stays by publicising attractions outside the city. Tourism contributes £350 million per year to the Cambridge economy.

- The city has a green belt and is surrounded by an attractive rural environment, with picturesque villages and

desirable, but expensive, countryside properties available for purchase.

Retailing – a major service industry

Retailing is one of the most important activities in the service sector. In the 1950s shops were located in small neighbourhood parades, local high streets and town centres. There were separate shops for different types of product.

Many large British cities had suffered bomb damage during the Second World War and their centres were rebuilt to include open-air pedestrian ‘shopping precincts’.

In the 1960s the concept of supermarkets arrived from America and was rapidly established in the UK. They needed larger sites to accommodate the bigger buildings and extensive car parks so they chose locations further out of town, often by main roads in the suburbs, which were easily accessible by car and where land was cheaper.

From the mid-1970s onwards, firms selling bulky household goods moved out of town centres. They occupied warehouse-style superstores and usually clustered together in retail parks, sometimes built on redeveloped industrial land. By the early 1980s these had been joined by a wider range of comparison goods retailers and ‘cash & carry’ or discount warehouses. All these developments threatened the commercial livelihood of traditional city centres. They reacted by introducing enclosed shopping centres, which offered an attractive

climate-controlled shopping environment with a full range of popular national chain stores.

In 1976 the first major free-standing shopping centre – effectively a complete town centre under one roof – opened at Brent Cross in northwest London. Modelled on American shopping

malls, it was followed by a number of larger regional shopping centres (Figure 4). By the mid-1990s there were over 250 retail parks nationwide and many hundreds of individual superstores and hypermarkets, and out-of-town retailing accounted for 25% of all sales.

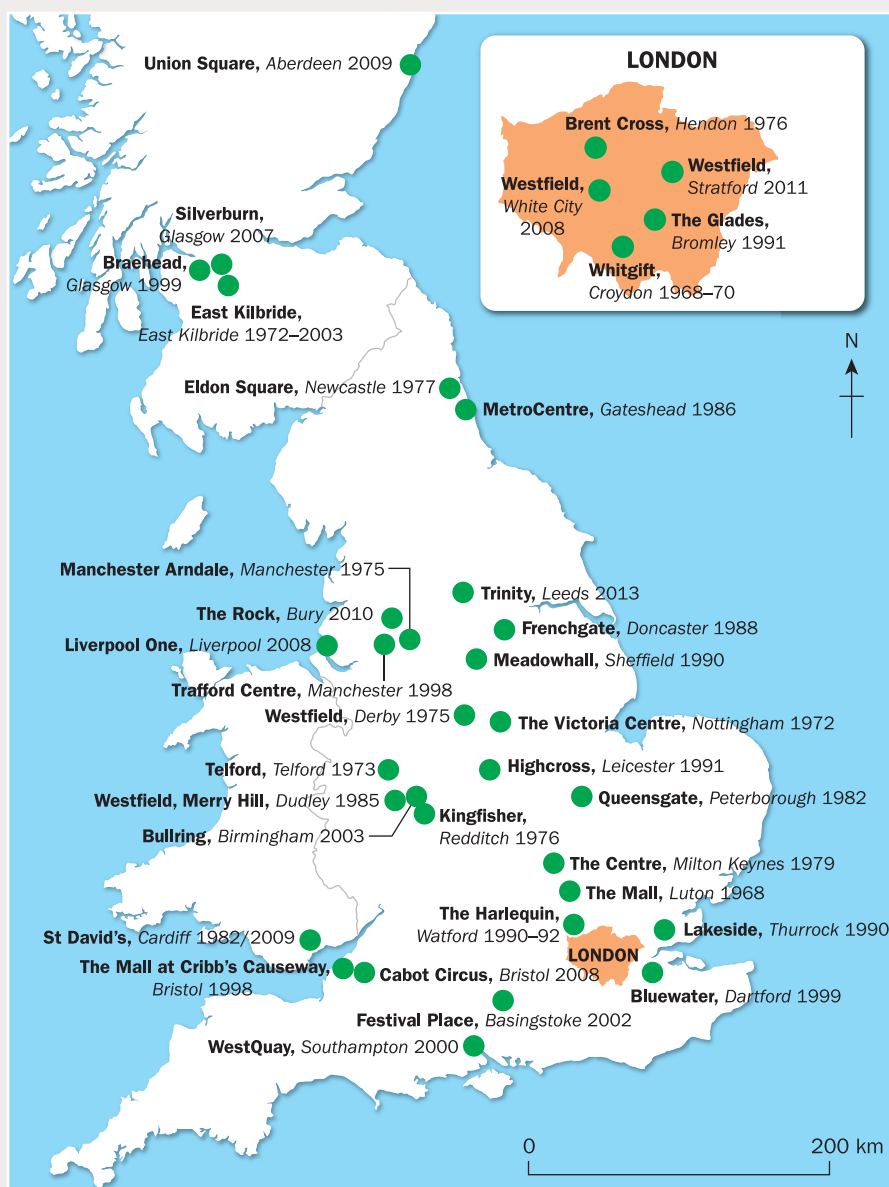


Figure 4 The UK's largest shopping centres and dates of opening



Figure 5 Amazon warehouses in the UK

Rise of internet shopping

By 2016 one-tenth of the UK population was shopping exclusively online, while a further half used the internet regularly for purchases. Internet sales will approach £10 billion in 2016 and are forecast to reach £15 billion by 2020.

The obvious benefits of convenience and control over spending appeal most to younger consumers and working people who can choose timed delivery slots to suit their needs. Smartphones and tablets have enabled more consumers to place orders 'on the go' rather than at home. The 'click and collect' service, introduced by Argos, has been widely adopted by other retailers and is proving very popular.

All the large supermarkets offer internet shopping and delivery

services. They have all struggled to make their online business profitable in an increasingly competitive market.

Outside the supermarket trade, Amazon is the giant of internet shopping (Figure 5). It has ambitions in the grocery sector too and recently joined forces with Morrisons to offer hundreds of fresh and frozen products through its Amazon Pantry and Amazon Prime services.

Dark stores

These are warehouses which assemble internet grocery orders. They are organised like a normal supermarket, but without the customers, and operate around the clock. Ocado has a high-tech base at Hatfield, while Waitrose uses a former warehouse in northwest London. Tesco has a ring of dark stores surrounding London but also assembles orders in its regular stores, as does Sainsbury's exclusively.

Return to the city

In 1996 a shift in government planning policy encouraged retailers to focus on town centre locations. This was motivated by the negative effects that out-of-town developments were having on city centres, traditional urban high streets and market towns. The big supermarkets responded by setting up chains of smaller, more convenient stores in cities, such as Tesco Express and Sainsbury's Local.

Regional shopping centres had been built mainly on brownfield

sites that were already in urban areas. That trend continued into the 21st century, with Westfield opening two giant malls in London at White City (2008) and Stratford, next to the Olympic Park (2011). Other major UK cities have seen new central shopping malls opened since 2000, for example Trinity Leeds and Bristol's Cabot Circus.

Decline of the high street

Following the financial crisis of 2008, the closure of the Woolworths chain sent shock waves through the UK's high streets. During 2012/13 a series of retailers failed and in spring 2016 another massive high street chain collapsed when British Home Stores went bankrupt, with the loss of 11 000 jobs.

High street shops have continued to struggle in the modern retailing environment. Since the 'credit crunch' of 2008 retailers have been paying over the odds to local authorities for council services. In 2016 the government finally announced results of its business rate revaluation.

In early 2012 it was predicted that 40% of high street shops would close over the next five years. Trading conditions worsened dramatically through 2012 and by the end of the year 15% of UK shops were vacant. There was also a north-south split in vacancies, with rates in northern towns running at 20–30%, compared with 10% or less in the south.

Conclusion

In the last 50 years there have been fundamental changes in employment patterns in the UK. Traditional 'factory floor' labour has largely disappeared as industries have closed

down or become more automated. Many new service jobs have been created and employment levels are high, for both men and women. However, these posts are frequently poorly paid, part-time or insecure.

A million employees are on 'zero hours' contracts, meaning they have no fixed hours and no guarantee of work. The labour market today can be tough and unrewarding.

Activities

- 1 Study Figure 1.
 - a Describe the changes for agriculture and fishing, manufacturing and services over time.
 - b Suggest reasons for the changes.
 - c Why do you think service industries are so important to the UK economy now?
- 2 Read Figure 2. Make a list of five ways in which ARM is typical of Cambridge's industrial sector, quoting specific evidence from the case study.
- 3 Look at Figure 3.
 - a What does it suggest to you about the advantages and disadvantages of tourism for Cambridge?
 - b Go to the tourist website visitcambridge.org and write a paragraph explaining the city's attractions for tourists.
 - c Suggest five types of service employment that rely on tourism.
- 4 a Arrange the following types of retail location into a 'shopping hierarchy', with the most important at the top and the least important at the bottom:
 - suburban high street • retail park • superstore • central business district • neighbourhood parade • regional shopping mall • corner shop • major suburban centre
- b Give an example of a shop type you might find in each location.
- 5 Look at Figure 5 showing the location of Amazon's warehouses in the UK.
 - a Describe where the warehouses are located.
 - b How might their distribution have been influenced by:
 - i major cities
 - ii the motorway network
 - iii the cost of land
 - iv recruiting workers?
 - c Why might Amazon be planning another warehouse at Sevington in Kent?
- 6 Refer to Figure 6.
 - a Calculate the percentage of shops in each category, then list

the categories in descending order of size.

- b Using the percentage figures, draw a pie chart to show the division of shop categories in Royston. Write a short commentary on your results.
- c Royston has a large Tesco superstore on its outskirts. How might this have affected the range of shops in the town centre?

Category	Number
Cars and cycles	17
Charity	6
Clothing	14
Convenience services	47
Financial services	10
Food	10
Household	22
Leisure	45
Non-professional services	29
Professional services	20

Figure 6 Shops in Royston, near Cambridge

Learning checkpoint

- The UK's industrial structure is typical of a post-industrial economy.
- The UK has moved towards a reliance on knowledge-based industries for its economic growth and wealth creation.
- Cambridge is a nationally important centre of modern technology, attracting talented staff from throughout the UK and abroad.
- Retailing is one of the UK's largest and most important service industries today.
- The trend for out-of-town locations has now changed to an emphasis on regenerating town centres.

Glossary task

Write glossary definitions of the following:

internet shopping

knowledge-based

post-industrial

regional shopping centre

retail park

start-up

workforce

Remember this case study

To help you remember this case study, make notes under the following headings:

Changes in the UK's structure of industry over the past 150 years

Reasons for the dominance of service industries in the UK today

Why Cambridge is an engine of growth for the current UK economy

How the nature of retailing in the UK has altered over the last 50 years

Try to make your notes fit a single sheet of A4.