



Core activities:

Software development:

- system software
- contract/bespoke
- turnkey solutions

Systems integration

Systems analysis and design

Software architecture and design

Project Management

Infrastructure design

12 Software & Computer Services

Related activities:

Facilities management

Consulting and training

Supply of contract staff

Office software and equipment

Software maintenance

Hardware design, manufacture and maintenance

Information supply and distribution

Communications services

Research and development

Related industries:

Management Consultancy

Telecommunications

Internet and digital media

Interactive Leisure Software

Publishing

Television & radio

Music

Film & Video

Design

Advertising

Architecture

REVENUES £30.3 billion (1998) ^a £36.4 billion (1999) ^a
EXPORTS £2.761 billion (1998) ^b
EMPLOYMENT 420,000 (1998) 555,000 (2000) ^c

12 SOFTWARE & COMPUTER SERVICES

^a ONS, 2001: *Services Quarterly Turnover News Release (Q3 2000)*. ^b ONS, 1998: *UK Trade in Services*. ^c ONS, 2000: *Labour Force Survey, autumn 1998, 2000*.

Software development as an activity is integral to many sectors as well as at the heart of the SCS (Software and Computer Services) sector itself. The SCS sector encompasses pure programming and all the software services required by users. Increasingly in-house software expertise is developing in many sectors which require bespoke development. Software development is included in the figures above but components of the software industry are present in all areas of industry and wider non-industry activities. Therefore, despite the large scale of these figures, the true extent and economic importance of the sector is significantly higher. Also, because of the blurring of boundaries between providers and users, definitions of the

industry differ and figures from different sources are often not directly comparable. Although the analysis here is driven by the figures available the wider economic picture presented by the computer service industry is indicative of the wider economic importance and represents the main channel to market for commercial (as opposed to leisure) software.

Furthermore, the software industry has been inseparable from developments in Internet and e-commerce activities since their inception. As software can be developed and disseminated in a non-physical form it has become a true global activity and development and supply chains can easily ignore national boundaries.

Therefore a great deal of activity in this sector is by inward investors, similarly many indigenous companies have establishments abroad or have interests in companies in other countries in order to open up new market channels as well as exploit others' expertise. Against this background the UK consistently outperforms in terms of market and state-of-the-art usage. The analysts IDC have said: "the UK is a hotbed of IT activity, ranging from sophisticated eBusiness awareness to CRM (Customer Relationship Management) and ASP (Application Service Provider – software as a service over the internet) adoption to rapid growth of spending on IT software and services."

INDUSTRY REVENUES

Industry revenues are dominated by the US, unsurprisingly as this is the single largest market with the added advantage of a generally common language and high levels of technology take-up. However Europe is increasingly of interest and has selected strengths expected to drive the next wave of developments, particularly mobile device technology, such as an

early roll-out of GPRS (General Packet Switch Radio Services) enabling always-on access to data services, which is seen as the first step to true Internet access "any time, any place, any device", further increasing the penetration of software-mediated technologies into all areas of activity.

GLOBAL IT MARKET REVENUES, 1999

MARKET	SIZE (£ BILLIONS)
US	<u>239</u>
EUROPE	<u>154</u>
JAPAN	<u>64</u>
REST OF WORLD	<u>83</u>
TOTAL	<u>540</u>

Source: EITO.

UK MARKET SIZE

ONS estimates of turnover show £36.4 billion for the software and computer services industry in 1999. Separate analysis by Richard Holway Ltd indicates that the UK spends the third largest proportion of GDP on IT in the world today. This makes the UK the second largest IT Market in Europe and closing on Germany, the current leader, with a 20% share of the Western

European total IT market (i.e. including hardware) as opposed to Germany's 23%. Given the greater market represented by Germany's higher population and greater GDP this is a considerable demonstration of the strength of the sector in the UK and market predictions are for continued higher-than-average growth, eventually reaching parity with Germany.

UK SCS MARKET

(£ BILLIONS)	1999
SYSTEMS SOFTWARE	<u>0.75</u>
HARDWARE MAINTENANCE	<u>0.92</u>
PROJECT SERVICES	<u>7.25</u>
TOOLS	<u>0.94</u>
APPLICATIONS SOFTWARE PRODUCTS AND SOLUTIONS	<u>4.33</u>
OUTSOURCING/PROCESSING/APPLICATION MANAGEMENT	<u>5.91</u>
VALUE ADDED SERVICES	<u>0.88</u>
TOTAL	<u>20.98</u>

Source: Richard Holway Ltd.

European Market Size

In 1997-98 the European market grew at just over 10%, a world leading growth rate.

EUROPEAN SCS MARKET, 1999-2003

(EURO BILLIONS)	1999	2003 (PREDICTED)
UK	<u>29.6</u>	<u>49.1</u>
GERMANY	<u>32.3</u>	<u>52.6</u>
FRANCE	<u>19.3</u>	<u>33.6</u>
ITALY	<u>9.6</u>	<u>15.5</u>
NETHERLANDS	<u>8.5</u>	<u>14.5</u>

Source: Pierre Audion Conseil/Richard Holway Ltd.

Balance of Trade

The official figures are shown below but a separate analysis from Richard Holway Ltd shows significantly higher data. The following analysis is based upon data sourced from Richard Holway Ltd, which considers software developed in the UK and distributed from overseas establishments via electronic links, IT services performed in the UK for customers outside the UK and revenues earned by overseas subsidiaries.

UK SCS export revenues grew 29% in 1999 to reach £8.8 billion about £1 billion of which can be directly attributed to revenue streams from overseas software and services companies acquired by UK companies, i.e. “new” acquisitions. The level of acquisition by UK SCS companies is increasing much faster than acquisitions of UK SCS companies. As a result, growth in UK SCS exports is expected to continue, spurred on mainly by the revenues generated from newly acquired overseas companies.

With over 100,000 companies operating in the sector, fewer than 300 companies have any measurable export revenues. The top 20 exporting companies account for 80% of all UK SCS export revenue; all of the top 20 are publicly quoted companies (although not all are quoted in the UK). UK SCS small and medium-sized companies accounted for less than 10% of export revenues in 1999.

UK companies derive around a third of revenues from exports compared with 25%-30% in France and Germany. Small and medium UK firms that do export tend to do better in terms of percentage revenue from exports than those in France and Germany, but large French and German companies do better than those in the UK.

BALANCE OF TRADE, 1998

(£ MILLIONS)	EXPORTS	IMPORTS	BALANCE
BUSINESS SERVICES	262	135	216
COMMUNICATION AND COMPUTER SERVICES	1,194	304	1,016
TECHNICAL SERVICES	112	31	80
OPERATIONAL LEASING	1	1	0
CULTURAL SERVICES	362	624	-233
TRADE RELATED SERVICES	338	104	300
TOTAL COMPUTER SERVICES INDUSTRY	2,761	1,384	1,378

Source: UK Trade in Services ONS.

Note: The sum of the component figures in the first two columns does not equal the totals shown, because the latter include disclosive data (i.e. all components of the "balance" column include disclosive data.)

EMPLOYMENT

Employment is very much an issue with the sector, owing to continuous growth rates in double figures, and the demand for skilled individuals is likely to remain high.

EMPLOYMENT IN COMPUTER-RELATED OCCUPATIONS; UK; AUTUMN 1998 TO AUTUMN 2000

(THOUSANDS)	AUTUMN 1998	AUTUMN 1999	AUTUMN 2000
EMPLOYMENT IN SIC92 DIVISION 72			
ALL PERSONS	420,000	479,000	555,000
126 – COMPUTER SYSTEMS AND DATA PROCESSING MANAGERS	45,000	51,000	51,000
214 – SOFTWARE ENGINEERS	91,000	121,000	129,000
320 – COMPUTER ANALYSTS, PROGRAMMERS	92,000	102,000	114,000
490 – COMPUTER ETC OPERATORS	11,000	13,000	16,000
526 – COMPUTER ENGINEERS ETC	23,000	28,000	28,000
TOTAL	261,000	313,000	339,000

Source: ONS, Labour Force Survey. These LFS figures include employees, the self-employed, unpaid family workers and people on government training schemes.

INDUSTRY STRUCTURE

The industry structure is a complex mixture of allegiances and competition that vary from market to market and technology to technology. Owing to the global relevance and applicability of software all large players are internationally based; there is a presence in the UK as well UK indigenous companies operating abroad. There is also a large number of small companies

either developing for niche markets or emerging technologies, or offering local services, as well as a number of significant small or medium companies distributing software widely for specific market segments or in collaboration with larger partners utilising their customer support services or market access.

REGIONAL DIMENSIONS

The service side is concentrated in areas which match other industries' concentrations, notably the south of England, Midlands and Scotland, the software side having a specific sectoral presence in Cambridge.

Owing to the recognised need for interaction between companies and the competition for staff there is a definite tendency to concentrate around areas with good access and transport such as the M4 corridor.

Selected UK-Developed Successes

The UK has some highly developed sector-specific software skills, for example in banking and finance where Sage Group is the leading supplier of financial accounting software products in the UK, France, Germany and the US with over 50% of the world market for business and accounting software for small and medium-sized enterprises.

Misys is one of the largest UK-owned independent software products companies, in the FTSE 100 index, and also one of the world's largest suppliers of applications software. Misys' core business lies in banking systems, in which it is the undisputed world leader.

Other leading companies at the forefront of current areas of activity include Logica, which like Misys is in the FTSE 100 index, and it is a global leader in SMS systems, which has seen massive take-up. New companies continue to emerge: companies like Netstore were one of the first "pure play" application service provider companies to float, which they achieved successfully in the middle of widespread stock market volatility for high technology companies.

SECONDARY ECONOMIC IMPACT

The utilisation of commercially widespread software in order to offer a competitive service is now a basic requirement in many large businesses and increasingly so in small businesses. The effects of e-business are inextricably linked with the SCS sector and the take-up of Internet usage by business clearly indicates its importance; 90% of UK employees now work in businesses which are connected to the Internet, a figure on a par with the US at 93%. 33% work in UK businesses which engage in online financial transactions with customers or suppliers – a higher proportion than the US, Sweden, Germany, France, Japan or Canada.

POTENTIAL FOR GROWTH

The sector growth is likely to continue apace. Despite recent share volatility the industry growth rates are still high in terms of revenue, even if profits are under pressure in some instances, particularly in the hardware companies.

Analysis conducted before the recent volatility shows growth rates continuing in double figures which, although possibly not reaching the levels of 1998, are unlikely to drop much below 15%. The issues for the industry are therefore those associated with success and continued rapid change.

IMPACT OF E-COMMERCE/ INTERNET/TECHNOLOGY

In many ways this sector is both the provider and state-of-the-art user of new impacting technologies and business methods.

The software sales model is likely to change: recent announcements have been made by many players looking to offer, at least to part of their target customers, a service agreement rather than straightforward product sales – annual subscriptions rather than one-off purchases. Access to the Internet

and increasing bandwidth have allowed the development of the application service provider (ASP), where the key element is the delivery of software services over the Internet, increasing economies of scale through a one-to-many approach to outsourcing and centralising maintenance and support functions.

This has a number of key features which suggest its take-up will be widespread as the techniques and business models develop. In particular it offers an independence from any given terminal or computer and centralises the skill base, offering more efficient deployment of scarce skilled staff.

In many terms the sector is pivotal in offering choice to the employee and consumer across a wide variety of industries, and activities from teleworking to the dot coms and internet retailing; all have been created by the activities of the SCS sector.

GROWING THE SECTOR – POINTS FOR CONSIDERATION

The availability of specific skills will always be an issue while software technologies change rapidly and industry growth continues at these consistently high levels for the foreseeable future. It is thus important that companies connect as widely as possible to the potential labour pool and embrace continuous training, as well as look at ways of using existing people as efficiently as possible by examining new ways of working and market delivery such as the ASP model.

With the growth of a range of terminal devices that can access the Internet or be programmed, including games consoles, smart phones, personal digital assistants, web pads and internet TVs, and simultaneously the development of data connections between common appliances, the key issues are likely to be common development platforms, data exchange methods and interoperability and a coherent user experience. These will

play out against the background of maintaining and developing trust and confidence in the sector's products by commercial and private users.

The drivers to growth in the software sector are inextricably linked to developments not only in the development of ever faster computers but also in the available bandwidth. The development of common broadband access changes the distribution issues for software, given its inherently "virtual" nature, just as it is doing for the music industry with MP3 files. The electronic distribution of software can have positive benefits, for example, in offering new products without delay, but it can also have complex impacts such as increasing the requirements for maintenance and support in the user community because of the pace of change it enables, and it has a potential effect on competitiveness, in reducing distribution and unit production costs dramatically.