

The Plessey Company PLC

History and development

3.1. Plessey was founded in 1917 to carry out jobbing engineering work. Between the two World Wars the company expanded into the manufacture of radios for civil and military use, components and telephone handsets and also engineered and manufactured the first mass-produced television set (designed for the Baird system). After the Second World War Plessey concentrated its activities on the design and manufacture of electronic components and equipment for both civil and military uses.

3.2. Plessey began to undertake R & D in relation to electronic components in the 1950s. In 1957 Plessey recognised the emergence of the semi-conductor industry and built one of the first semi-conductor factories in the United Kingdom.

3.3. Prior to 1960 the company was primarily a components and equipment producer in telecommunications, defence electronics and engineering and components. During the 1960s Plessey made a number of acquisitions which enabled it to concentrate on solid-state technology and on the production of complete systems for civil and military communications, military radar and traffic control. At the same time it acquired increasing experience in the development and manufacture of electronic components and high purity materials.

3.4. During the middle and late 1970s, Plessey recognised the importance of digital technology for the future of the communications industry and decided to concentrate on the development of the use of silicon, optical fibre and gallium arsenide with the objective of building up an integrated communications company in three core areas of business: telecommunications, defence communication and electronic systems and technologically advanced high value-added micro-electronics and components.

3.5. In 1982 Plessey expanded further with the acquisition of Stromberg-Carlson Corporation which designs and manufactures telecommunications equipment in the United States of America. In 1984 a 35 per cent interest in Elettronica SpA, an Italian designer and manufacturer of electronic warfare equipment, was acquired and in 1985 Plessey acquired Ameco (Hydrospace) Ltd, a United Kingdom manufacturer of towed array sonars.

3.6. The growth in the sales and trading profits of Plessey over the past 15 financial years is set out in Table 3.1.

TABLE 3.1 Plessey sales and trading profits, 1971 to 1985

Year ended	Sales £m	Sales revalued by	Trading profits	Trading profits	Profit as % of sales
		RPI (year ended March 1985 = 100) £m	before interest and taxation £m	revalued by RPI (year ended March 1985 = 100) £m	
June 1971	258.1	1,204.0	23.4	109.2	9.1
June 1972	283.5	1,221.1	22.7	97.8	8.0
June 1973	325.1	1,298.0	32.3	129.0	9.9
June 1974	399.5	1,422.1	40.2	143.1	10.1
March 1975	429.3	1,346.1	41.0	128.6	9.6
March 1976	490.1	1,233.3	34.5	86.8	7.0
March 1977	568.8	1,241.7	39.2	85.6	6.9
March 1978	611.1	1,170.2	41.2	78.9	6.7
March 1979	648.3	1,146.2	44.6	78.9	6.9
March 1980	751.0	1,146.6	66.3	101.2	8.8
March 1981	844.5	1,108.6	86.0	112.9	10.2
March 1982	985.2	1,159.9	100.1	117.9	10.2
March 1983	1,119.7	1,231.1	119.0	130.8	10.6
March 1984	1,252.3	1,315.6	146.3	153.7	11.7
March 1985	1,415.7	1,415.7	143.3	143.3	10.1

Source: MMC study.

Notes:

1. Excludes share of sales and profits of associated companies and intra-group sales.
2. The financial year end of Plessey was changed from June to March with effect from 1 April 1975.
3. The year to March 1975 is a full 12-month year as is the year ended June 1974 to enable a year by year comparison to be made. However, the quarter ended June 1974 has been included in both years.
4. During the period there have been substantial changes in the nature of Plessey's business and some 50 to 60 businesses were disposed of. The trend in sales revalued with reference to the RPI therefore cannot necessarily be interpreted as a measure of the change in the volume of output of products with which Plessey is at present concerned.

Plessey businesses

3.7. The activities of Plessey can be divided into the following three main areas:

- (a) *Telecommunications and office systems* is the largest area of the group's operations and in the financial year ended 29 March 1985 contributed about 48 per cent of world-wide turnover. The principal activities consist of public switching systems in the United Kingdom (System X) and in the United States of America, key systems and PABXs, telephones, payphones, subscriber, junction and trunk transmission equipment, telex switching equipment, data networks, road traffic controls, rail communications equipment and industrial controls for nucleonics and mechanisation.
- (b) *Electronic systems and equipment* accounted for approximately one-third of the group's world-wide turnover in the financial year ended 29 March 1985. This part of the group consists of businesses which have predominantly military interests and the principal activities are radar, displays, defence systems, underwater systems, military communications systems, avionics, radio systems, cryptographic equipment, turnkey airport projects and microprocessor-based systems and sub-systems.
- (c) *Engineering and components* consisting of businesses manufacturing micro-electronics and components and aerospace and engineering accounted for almost all the remainder of the group's turnover in the financial year ended 29 March 1985. Major activities are silicon ICs,

gallium arsenide products, LED displays, fibre optic transmitters, receivers and data links, optical fibre connectors, microwave electronic products, microwave materials, signal processors and displays, connectors for both industrial and defence applications, wound products, aviation fuel systems and actuators, naval off-board decoy systems, army electrical generation systems and formed plastic parts for the automotive, computer, business systems, audio visual and telecommunication industries.

3.8. A breakdown of Plessey's sales and trading profits for the last five financial years into the major areas of its activities is set out in Table 3.2. Table 3.2 also analyses turnover between United Kingdom customers and overseas customers.

Organisation and management

3.9. The main Board of Plessey comprises 16 directors of whom four are non-executive. Overall management of the group is vested in the committee of the main Board, the Executive Committee. The Chairman of the Executive Committee is Sir John Clark, the Chairman and Chief Executive of Plessey, and the remaining members are the group's Managing Director and three other members of the main Board. The Board also has a separate Finance Committee which assesses the company's performance and determines financial strategy within the overall group strategy.

3.10. Plessey's United Kingdom businesses are grouped into the three divisions described in paragraph 3.7. Stromberg-Carlson Corporation is also included in the Telecommunication and Office Systems Division for management purposes but other overseas subsidiaries, with the exception of one Italian subsidiary, are managed separately and are grouped into three divisions.

3.11. The company told us that it was its policy to devolve responsibility to the main divisional boards (major management boards) and through them to the operating subsidiaries sufficient to enable them to manage their businesses, while at the same time retaining ultimate control over the strategic direction to be followed by the group and the allocation of physical and financial resources. This policy is followed throughout the organisational structure to ensure that each operating subsidiary or unit has a complete management team with the necessary authority and resources to achieve its agreed objectives. Routine capital investment decisions within approved plans and budgets are delegated to the boards of operating subsidiaries, with the exception of land and buildings and new products.

3.12. Due to its divisional structure, which includes a number of unincorporated operating units, most trading in the United Kingdom is carried out in the name of Plessey-UK Ltd, though a small number of subsidiaries trade under their own names. The group's research activities are concentrated in Plessey Research and Technology (PRT).

TABLE 3.2 Plessey: analysis of turnover and operating profit by activity

	1980-81		1981-82		1982-83		1983-84		1984-85	
	Turnover	Operating profit	Turnover	Operating profit	Turnover	Operating profit	Turnover	Operating profit	Turnover	Operating profit
Telecommunications	353.1	40.0	418.9	54.5	507.5	67.5	577.0	76.4	677.3	74.6
Electronic systems and equipment	235.9	19.7	300.7	22.0	370.9	29.1	426.0	38.0	460.3	24.1
Aerospace and engineering	124.2	15.0	123.9	15.3	120.4	11.3	109.4	15.2	121.7	22.0
Microelectronics and components	105.9	3.2	113.8	6.3	96.4	8.5	107.7	12.5	120.0	13.8
Computer peripherals	25.4	2.9	27.9	(1.8)	24.5	(2.4)	32.2	(2.8)	36.4	(0.7)
Group services*	—	5.2	—	3.8	—	5.0	—	7.0	—	9.5
Total	844.5	86.0	985.2	100.1	1,119.7	119.0	1,252.3	146.3	1,415.7	143.3
United Kingdom customers†	532.0	N/A	610.4	N/A	673.2	N/A	771.5	N/A	975.5	N/A
Overseas customers	312.5	N/A	374.8	N/A	446.5	N/A	480.8	N/A	440.2	N/A
	844.5	86.0	985.2	100.1	1,119.7	119.0	1,252.3	146.3	1,415.7	143.3

Source: Plessey.

* Group services represent an internal profit generated by charging commercial rents, telephone charges etc to the operating activities.

† Turnover figures for 1983-84 and earlier years have been revised to include the sales value of work completed on long-term contracts and it is assumed that all of them are United Kingdom customers.

N/A = not available.

Planning and control

3.13. Plessey's planning process has its origins in a system introduced by the group in the mid-1970s. Since then the system has been revised on two occasions. The key elements of the planning system currently in use by the operating subsidiaries consist of:

- (a) a business charter identifying the range of products that may be developed and the markets that may be addressed; and
- (b) annual financial targets for each year of the five-year planning period showing the expected levels of return and cash limits.

Financial targets are reviewed and set annually by the Executive Committee of the main Board.

3.14. Each of Plessey's operating businesses is required to submit a formal business plan to corporate management based on a three-phase annual review which is designed to analyse its situation, assess strategic options available to it and formulate detailed plans for implementation of the selected option. In addition operating businesses produce detailed technical plans setting out the technological requirements implicit in their business plans.

3.15. Plessey told us that its planning system provided a rolling five-year planning framework containing detailed financial and strategic plan projections that were modified over time. The purpose of its planning system was to provide corporate management with an important element of advice in investment decisions rather than to establish annual forecasts of the individual results of operating businesses in each of the five years covered by the business plans.

3.16. Operating subsidiaries or units are funded by their territorial holding company; they have no equity or loan capital or any external borrowings and consequently incur no direct charge for servicing their asset base. In order to focus management's attention on the cost of the funding that they absorb Plessey told us that a monthly finance charge is levied on each business with the aim of motivating management to exercise strict control over the assets employed and at the same time to reflect financing costs in contracts and product prices where this is feasible. Each of Plessey's operating subsidiaries or units is self-accounting with a complete finance function. This provides management with a dedicated financial service covering all aspects of main-stream accounting and internal control plus local support and advice on business issues and on improving the performance and profitability of the unit. Finance Directors or controllers report directly to the Divisional Finance Director, who, in turn, is ultimately responsible to the Group Director of Finance.

Financial information

3.17. Table 3.3 summarises Plessey's historical cost profit and loss accounts for each of the last 10 financial years. Table 3.4 summarises Plessey's historical cost balance sheets as at the end of each of the last 10 financial years.

TABLE 3.3 Plessey: summarised profit and loss accounts

	<i>£ million</i>									
	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
Turnover	490.1	568.8	611.1	648.3	751.0	844.5	985.2	1,119.7	1,252.3	1,415.7
Operating profit	34.5	39.2	41.2	44.6	66.3	86.0	100.1	119.0	146.3	143.3
Associated companies	6.0	8.5	10.2	10.5	3.5	3.1	4.4	6.7	6.5	7.1
Investment income and interest (net)	(5.8)	(7.4)	(8.5)	(8.8)	(9.7)	(4.6)	6.9	20.7	23.3	13.2
Profit on ordinary activities before taxation	34.7	40.3	42.9	46.3	60.1	84.5	111.4	146.4	176.1	163.6
Taxation on profit on ordinary activities	(15.3)	(13.0)	(14.5)	(14.2)	(19.0)	(29.0)	(38.5)	(60.5)	(61.4)	(70.4)
Minority interests	(1.1)	(1.0)	(0.9)	(1.2)	(1.5)	(1.6)	(2.0)	(3.0)	(2.7)	0.3
Extraordinary items	1.5	(14.5)	(9.9)	(2.9)	(4.7)	(1.5)	2.9	(1.4)	(2.7)	(2.6)
Dividends	(9.9)	(11.5)	(13.0)	(15.0)	(16.5)	(18.5)	(21.0)	(24.5)	(27.8)	(32.2)
Profit retained	9.9	0.3	4.6	13.0	18.4	33.9	52.8	57.0	81.5	58.7
Operating profit as a % of turnover	7.0	6.9	6.7	6.9	8.8	10.2	10.2	10.6	11.7	10.1

Source: Plessey.

TABLE 3.4 Plessey: summarised balance sheet

	£ million									
	<i>Year ended 31 March</i>						1982	1983	1984	1985
	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Tangible fixed assets	127	140	135	134	133	141	143	172	212	284
Investments	24	28	32	11	12	12	11	19	29	21
Stock, contracts in progress and debtors less liabilities (other than borrowings)	143	154	160	168	175	173	71	64	76	163
Capital employed	294	322	327	313	320	326	225	255	317	468
Cash and marketable securities	35	32	17	19	21	62	238	271	325	220
Borrowings	(70)	(90)	(92)	(72)	(62)	(54)	(56)	(57)	(74)	(107)*
Customers' deposits	N/A	N/A	N/A	N/A	N/A	N/A			(15)	(5)
Net tangible assets	259	264	252	260	279	334	407	469	553	576
Capital and reserves	222	220	228	235	248	298	360	408	490	525
Minority interests	6	6	6	6	7	7	8	10	11	9
Provisions	31	38	18	19	24	29	39	51	52	42
	259	264	252	260	279	334	407	469	553	576
Gearing (borrowings and customers' deposits net of cash/capital and reserves and minority interests (%))	15.4	25.7	32.1	22.0	16.1	(2.6)	(49.5)	(51.2)	(47.1)	(20.2)

Source: MMC based on Plessey's published accounts.

N/A = not available.

* The borrowings figure of £107 million for 1985 does not include £36 million for finance leases which have been included in liabilities.

TABLE 3.5 Plessey: historical cost financial statistics

	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
Average capital employed* in the business (£ million)	308.0	324.5	320.0	316.5	323.0	275.5	240.0	286.0	392.5
Profit before finance charge and income from other investments (£ million)	47.7	51.4	55.1	69.8	89.1	104.5	125.7	152.8	150.4
Return on average capital employed (%)	15.5	15.8	17.2	22.0	27.6	37.9	52.4	53.4	38.3
Average shareholders' funds and minority interests* (£ million)	261.5	258.0	256.0	269.5	306.5	370.5	438.0	511.0	564.5
Profit on ordinary activities before tax (£ million)	40.3	42.9	46.3	60.1	84.5	111.4	146.4	176.1	163.6
Return on average shareholders' funds and minority interests (%)	15.4	16.6	18.1	22.3	27.6	30.1	33.4	34.5	29.0
Earnings per ordinary share (pence)	5.0	7.4	11.8	14.7	21.9	30.5	33.4	14.9†	12.3

Source: MMC based on Plessey's published accounts.

* The figures for capital employed and shareholders' funds and minority interests are simple averages of the amounts at the beginning and the end of each year.

† Ordinary shares of 50p each were sub-divided into 2 ordinary shares of 25p each on 29 July 1983.

3.18. Table 3.5 brings together a number of historical cost financial statistics which illustrates Plessey's overall financial position and performance for the past nine years. The return on average capital employed in operating activities has risen over the period from 15.5 per cent in 1976-77 to 38.3 per cent in 1984-85. The return on average shareholders' funds and minority interests shows an increase from 15.4 per cent in 1976-77 to 29 per cent in 1984-85. Based on the 1984-85 figures, average annual capital employed in operating activities represents some 71 per cent of the average shareholders' funds and minority interests.

3.19. Table 3.6 shows the make-up of Plessey's historical cost fixed assets as at 29 March 1985, and a summary of the company's source and application of funds statements for the last five financial years is at Appendix 3.1.

TABLE 3.6 Plessey: tangible fixed assets at 29 March 1985

	<i>Cost or valuation</i>	<i>Depreciation</i>	<i>£ million Net book value</i>
Land and buildings			
Freehold	80.2	7.1	73.1
Long leasehold	4.5	0.6	3.9
Short leasehold	4.8	3.4	1.4
	89.5	11.1	78.4
Plant and machinery	111.2	46.5	64.7
Fixtures, fittings and equipment	217.4	95.5	121.9
Assets in course of construction	18.5	—	18.5
	436.6	153.1	283.5

Source: Plessey.

Note: Plessey complied with SSAP 21 in preparing its Annual Report and Accounts for 1984-85.

Employment and production facilities

3.20. At the end of 1985 Plessey had approximately 33,700 employees world-wide of whom approximately 26,900 were employed in the United Kingdom. Plessey told us that for the past 10 years it had recruited an average of 250 graduates per year. The company considered that its record of industrial relations was good.

Exports

3.21. Over the past 15 years Plessey's exports from the United Kingdom have grown from £39.7 million in 1970-71 to £163.8 million in 1984-85, currently equivalent to 17 per cent of group sales in the United Kingdom. A breakdown of Plessey's exports by area of activity is given in Table 3.7.

Research and development

3.22. Plessey's expenditure on research and development over the last five financial years is set out in Table 3.8. The company pointed out that its own expenditure on R & D had increased by 228 per cent during the last five

TABLE 3.7 Plessey's exports by area of activity

Area of activity	Financial year ended March				
	1980-81	1981-82	1982-83	1983-84	1984-85
Telecommunications	16.9	11.9	16.1	14.1	24.3
Electronic systems	64.7	94.5	129.1	116.9	91.0
Micro-electronics & components	11.7	13.7	15.1	20.4	31.6
Aerospace & engineering	12.2	14.1	10.0	8.1	13.0
Computer peripherals	0.8	0.6	0.2	0.4	3.9
Total	106.3	134.8	170.5	159.9	163.8

Source: Plessey.

financial years. Plessey told us that it expected that the nature of customer-funded R & D would change as a result of the changed policies of its principal customers, BT and the MOD. In the case of BT, the major part of System X development has already been carried out, and Plessey will sustain the product through company-funded development (as regards the next generation of public switching equipment, Plessey has set in hand arrangements for spreading the costs of such development through its participation in the Quadripartite Agreement and other European collaborative programmes). In the case of the MOD, the emphasis of its recently adopted policy is upon greater use of competitive tendering and a move from cost plus to fixed price contracts: the financial implications of this change are that, whilst Plessey would itself have to fund, to a greater extent than at present, the preliminary work required to put itself into a position to tender, on securing a tender Plessey will be carrying out any necessary R & D work involved in the knowledge that the MOD is already contractually committed to paying a price that includes the cost of that R & D. Plessey considered that these circumstances (which do not arise where the MOD continues to customer-fund development) may involve a change in the cash flow position which would be readily manageable.

TABLE 3.8 Plessey's expenditure on research and development

	Financial year ended March				
	1980-81	1981-82	1982-83	1983-84	1984-85
Total R & D	128.4	135.1	166.8	216.0	303.0
Company-funded	25.5	31.7	45.1	66.4	83.8
Company-funded %	19.9	23.5	27.0	30.7	27.7

Source: Plessey.

3.23. As indicated in paragraph 3.12, Plessey's research activities are concentrated in and co-ordinated by PRT. The research facilities consist of the group's research centres at Caswell (specialising in solid-state research) and Roke Manor (specialising in systems research in all electronic systems and latterly telecommunications). Additional facilities of PRT consist of a technical planning unit, Plessey Information Engineering, which specialises in computer-related services and software, and a technology unit whose responsibilities include computer-aided design, factory automation and computer-integrated manufacture. Product development, as distinct from research, within Plessey is initiated and controlled by the operating businesses.

3.24. Plessey told us that its R & D proposals are derived via its planning and control system described in paragraphs 3.13 to 3.15. The choice of new research programmes is determined by the group's Corporate Research Panel. In addition to such market-orientated research, speculative long-term research, which is not directly related to commercial projects, is undertaken. The group's private venture research is largely funded by a levy on the turnover of the three principal United Kingdom operating divisions.

3.25. Plessey told us that it had become heavily involved in the Alvey programme in the United Kingdom and the European Community's ESPRIT programme and that it is also participating in the European Community's RACE programme (see Appendix 2.2). In 1985 Plessey entered into an agreement with three other European public telecommunications manufacturers to collaborate in specific areas of R & D of common interest to the parties.

3.26. Plessey employs some 5,124 engineers, scientists and technologists and 5,110 technicians and technician engineers at its research centres and in the product development facilities in the operating businesses.