The routes through which the science base is translated into innovative and competitive technology : minutes of evidence, Wednesday 23 June 1993 ... / Science and Technology Committee.

HOUSE OF COMMONS SESSION 1992–93

SCIENCE AND TECHNOLOGY COMMITTEE

THE ROUTES THROUGH WHICH THE SCIENCE BASE IS TRANSLATED INTO INNOVATIVE AND COMPETITIVE TECHNOLOGY

MINUTES OF EVIDENCE

Wednesday 23 June 1993

Dr Richard Summers, Mr John Kirkpatrick, Mr David Harrison and Mr Michael Riding

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WEDNESDAY 23 JUNE 1993

Members present:

Sir Giles Shaw, in the Chair

Mr Spencer Batiste
Dr Jeremy Bray
Mrs Anne Campbell
Cheryl Gillan
Mr William Powell
Sir Trevor Skeet
Sir Gerard Vaughan

Memorandum submitted by 3i Group plc (17 June 1993)

1. 3i AND INVESTMENT CAPITAL

1.1 3i has been investing in the UK for nearly 50 years, and for the past 10 years in continental Europe. During this time, over £5.7 billion has been invested in 11,500 businesses. 3i does not seek to target particular industrial sectors, but aims to invest in companies with able management teams, whatever their sphere of activity. 3i is not a limited life fund and this, combined with a large portfolio and substantial resources, enables 3i to take a long-term view of its investments, whether equity or loan capital, with no requirement for realising the shareholding. *(Appendix I—About 3i)*

1.2 This long-term approach is particularly suitable for the financing requirements of technology and manufacturing businesses, and it is probably for this reason that our current portfolio of 3,800 firms has approximately half engaged in manufacturing *(Appendix II)*. Indeed, we estimate that 3i-backed companies account for well in excess of 7 per cent and perhaps as much as 10 per cent of total manufacturing employment in the UK. Of the companies in 3i's UK portfolio which have obtained stock market flotations in the last 10 years, approximately 22 per cent are technology companies. *(Appendix III)*

1.3 Although we are active in the financing of large companies and have been involved in some of the largest management buy-outs, the core of our business remains very much in the small- and medium-sized private company area—in recent years some 60 per cent by number of our investments were for amounts of £250,000 or less and we estimate that over 75 per cent of our investee companies have a turnover less than £10 million.

1.4 We invest in businesses at all stages of their economic life. We finance business start-ups, and we invest in businesses to enable them to develop or grow (growth capital). We also finance the change in ownership of a business to enable the incumbent management team to buy it (MBO) or an external management team (MBI). Seventy-six per cent of the companies financed by 3i have a turnover of £0.5 million to £30 million, 14 per cent a turnover of less than £0.5 million. In 1991-92, 3i made 822 investments totalling £415 million. Over half of investments by number (56 per cent) and 44 per cent by amount were follow on investments to existing customers. 3i's claim to be a long-term investor is borne out by the facts. Over 23 per cent of our current investments were made 12 or more years ago; over 7 per cent were made over 21 years ago. Almost 50 per cent of our portfolio consists of investments made prior to 1985. These statistics are despite the increase in 3i's investment activity over time which has naturally increased the proportion of recent investments.

1.5 There is no single measure to provide market share statistics for 3i's business. By reference to 1992 BVCA figures (which cover only part of 3i's business) we invested in 48 per cent of the market by number of investments and 22 per cent by amount *(see Appendix IV)*

1.6 *Appendix V* is a "Product Positioning Map" prepared by the London Business School. This provides a graphical representation of 3i's market position and lists our major competitors.

2. INVESTMENT POLICY

2.1 3i's investment objective is to achieve consistent, long-term capital growth in the value of its portfolio and to distribute an attractive dividend to its shareholders.

2.2 3i is a commercial organisation and we seek to obtain a return on the money we invest, commensurate with the risk we take. Often, the majority of our investment in any company is at risk if the client company fails. Our investment philosophy is the same for technology and manufacturing companies as for other businesses, but our long-term approach, our ability to assess such investments and our strong regional office network has probably given us a greater share of technology and manufacturing investment than any other institution.

The cost of printing and publishing these Minutes of Evidence is estimated by HMSO at £2,020.

2.3 3i invests in a wide range of technologies and all sectors of industry, on occasions we invest in businesses that compete with each other. We take minority shareholdings and are not involved in the day to day running of the business. If the level of funding requires more than can be provided in this fashion, as is often the case in a high growth technology situation, then we would lead a syndicate of investors, each with a minority holding. It is also important that follow-on investment is available, in general 40 per cent of 3i's investment in any year is the provision of further funds to existing customers.

3. INVESTIGATION AND ASSESSMENT

3.1 Our regional structure and the deliberate mix of expertise amongst our staff is a key feature of 3i. We have 18 offices throughout the UK and six in Continental Europe. Not only does this network bring us much closer to our customers, it also allows offices to develop a far better understanding of their local industries. Amongst our staff there is a deliberate mix of accountants, MBA's and science graduates.

3.2 We have a well proven procedure of due diligence. Investment proposals are developed by our local offices and our staff in these offices make the initial decision as to whether to invest or not. If the amount is of a certain size, the decision will remain entirely within that office.

3.3 Regardless of the size of an investment, the offices can call in the services of the 3i central Industry Department, staffed by qualified engineers and other industrial specialists, to help with advice. These industrial advisers have had experience in industry, not only in technical roles, but in senior management roles as well. Typically the advisers have been a managing director or a general manager of a company for a number of years prior to joining 3i.

3.4 Both our regional office staff and our industrial advisers will visit the company and closely question the company's management. They will undertake a limited amount of other research and will take up references on both the management and the company.

3.5 Between the offices and Industry Department, we believe that we can make accurate and cost effective judgments about the desirability of making investments in technology based companies, as well as in others.

3.6 In order for us to invest in a business, we need to believe that it will meet certain levels of financial performance in the immediate future and to have confidence that it will have a viable future. In order to make judgments on the likelihood of this, we will want to understand the company's products, the market for them and their competitiveness in that market. We shall want to assure ourselves that the technology is competitive and be clear on future development requirements. We shall want to ensure that adequate management and financial controls are in place.

3.7 Most of all however we need to know that the overall management of the company is competent, that all functional requirements are adequately covered and that a clear cut business strategy is being pursued. Directly or indirectly, it is lack of management of the right calibre which is most often the cause of us declining to invest in a company.

3.8 We look at many companies where for one reason or another, a 3i investment does not result, perhaps twice as many as we actually complete.

4. SPECIAL INITIATIVES FOR SCIENCE AND TECHNOLOGY BASED BUSINESSES

4.1 3i has been attracted to the high growth achieved by young technology based businesses and to the consistent returns in manufacturing companies where there is a regular programme of innovation. For this reason we have always encouraged activity at the leading edge of high-tech investment and liaison with universities. It must be emphasised that this is in addition to our regular investment in technology based businesses through our regional offices. Our experience may however be useful to the Committee.

4.2 **High-Tech Investment.** 3i defines High-Tech Investment as the financing of technology based start-up companies which rely entirely on a new product or process ideas which have not yet reached the marketplace. In general one individual will be the driving force although the technology skills may be spread across a team. The leader is more likely to come from research and development in industry than from an academic institution. The challenge is to build the idea into a business.

4.2a **Technical Development Capital Limited (TDC).** Formed in 1962, partly in response to recommendations in the Radcliffe Report, TDC started with an initial share capital of £2 million subscribed by the insurance companies and other institutions. Its performance failed to impress and in 1966 3i, a 5 per cent shareholder in the original offer, made an offer for all the shareholding. By 1970 TDC had invested over £6 million in 100 companies, its mandate was to ensure that "no worthwhile technical development fails to be exploited in this country merely through lack of financial backing at the commercial stage". For five years

the TDC Innovator of the Year Award attracted over 100 entries each year. Of the five winners four failed, and one, Domino, went on to become a quoted company. Oxford instruments (Super Magnets) and Domino (Ink Jet Printing) were TDC's most successful investments. Unfortunately at that time considerable effort was also put into financing NC machine tools, a sector which was clearly in decline in the UK. As well as the innovator award TDC did experiment for a short period with providing £50,000-£100,000 to a wide variety of opportunities in the belief that an equity injection of this nature would allow the company to demonstrate enough progress to be funded in a further round. It was unsuccessful, with the money generally spent on further product development and not on initial business infrastructure.

4.2b By 1982 3i was focusing on international technology and providing hands-on management. **3i Ventures** was the new name for this activity with offices in London, Boston, Massachusetts and Newport Beach, California. The new staff recruited all had industrial experience in the electronics, communications or healthcare sectors. This initiative was clearly modelled on the USA venture partnership which was fully developed by the mid 1970s. It was not easy to transfer this into the UK and, whilst there were successes in the UK, it was Newport Beach and Boston which lead the way. One of the few examples of international transfer was Rodime. This Scottish based company was the first to manufacture 3½ inch computer hard disks, now one of the key components of the personal computer. Rodime was later overtaken by competitors based in California with manufacturing sourced in the Far East. In the UK we never saw the volumne of marketable product ideas which flowed freely into our offices in the States. By the late 1980s, 3i Ventures' portfolio had cost £170 million, was not showing a certain return and there was little evidence that we could transplant the USA style. For this reason we decided to cease new investment in the USA, supporting only follow-on investments in our portfolio which is now administered by the same staff trading from two venture partnerships.

4.2c In the UK 3i's success with our Management Buy-In and Non-Executive Director programmes produced a remarkably good pool of experienced managers willing to be associated with high-tech companies. This allowed us to withdraw from hands-on management where we have always been uncomfortable over the conflict that arises between the responsibilities as a Director of the company and the role of Investment Executive. In 1992 3i merged it's High-Tech Unit with Charterhouse Japhet to form **Trinity Capital Partners.** Trinity's mandate is to concentrate on leading edge activities and in this case the focus is on environmental opportunities as well as healthcare and electronics. We would emphasise that Trinity is not expected to make more than 10-12 investments in new companies each year and the majority of our technology investments will still be handled from our regional offices, like any other investment undertaken by 3i.

4.3 **Cambridge Science Park.** In 1983 3i moved its regional office from the centre of Cambridge onto the science park. As part of the arrangement with Trinity College 3i also took the risk of constructing on its new site 17 small, 2,500-5,000 sq ft start-up units. This was an experiment on our part. Trinity College subsequently built the Innovation Centre on the Science Park and St John's College followed later with their St John's Innovation Unit for seed-corn ventures. Our interest was in working close to new start-up companies to build an early partnership. Despite this over 60 per cent of the new companies we then financed failed. Tadpole Technology (Computer Software) and Ethical Generics (Pharmaceuticals) recently floated and they, together with six other established companies have proved, eight years later, that the experiment was financially profitable.

4.4 **Research Exploitation Limited (REL)** was a joint company founded in 1985 by 3i and Research Corporation Inc and is now wholly owned by 3i. This business was a private sector competitor to NRDC/BTG and has built up a portfolio of patented products, which are licensed to multi-national groups. The most difficult part of this type of business is establishing good communications within a University to allow a commercial review of research projects. An additional problem we faced with REL was that operating as a national business we found it difficult to give the level of service expected by an academic who quite naturally wants to discuss his research in his own laboratory. Financially, the low conversion ratio, 1:300 between research ideas reviewed and products generating licensed income is a problem and required substantial external support. For these reasons we now operate locally through associate companies, IMPEL Limited (Imperial College), Quantum Fund Edinburgh, Quantum Fund Newcastle-upon-Tyne, and Quantum Fund Cambridge. None of these ventures have been able to support their operating overheads from the licence fee income and all use consultancy and seed-corn investment methods of improving their business returns. We believe that these local activities we have now encouraged will be more cost effective and by this means have a better chance to be financially viable. Although both BTG and Research Corporation are established businesses, the scale of their operations does not suggest that licensing could become "big business".

5. Case studies of typical investments

5.1 *Appendix VI* contains case studies of seven technology based companies in which 3i has invested. In only one example, Photo Bioreactors Ltd, did the technology come straight out of a University. In most cases we find that individuals have first developed an interest in their product idea whilst working in larger

companies or, as was the case with Domino Printing plc, on consultancy contracts for large companies. All the family of inkjet companies, Domino, Elmjet Ltd and Xaar Ltd, have succeeded in developing technology abandoned by larger companies. Very often the research was targeted in another area and the ideas abandoned would not have met corporate objectives. Sealand Industries Ltd, oil wellhead equipment, and BE Wedge Ltd, hot dip metal galvanising, have developed established technologies and are now market leaders internationally. Sealand exports to the USA and Wedge recently purchased one of the four largest galvanising businesses in Germany and is recognised as one of the most efficient producers in Europe. Finally, Calluna, a recent start-up, illustrates the risks faced at the start of a new venture.

5.2 Whilst Photobioreactors and Calluna were administered by our specialised high tech team all the other examples were managed locally. Our regional offices in Birmingham, Cambridge, London and Glasgow, together with staff from our Industry Department, were able to assess and guide these investments.

5.3 Not all these cases have been successful. Photobioreactors failed after five years when the large-scale production plant failed to produce good yields, 3i lost £1.3 million.

Domino Printing plc is now a quoted company; 3i remain a shareholder 14 years after we first invested. Elmjet has recently been sold to GEC at a price which simply recovers costs to date. Xaar was runner-up in the Prince of Wales Award for technical innovation in 1993. Sealand Industries Ltd was acquired by USEL plc in 1992. BE Wedge Ltd remains a family-owned business and is now expanding into Europe 35 years after 3i first invested. Calluna faces an uncertain future as the technologies for the next generation of portable computer "shake down".

6. Comparison with continental Europe, USA and Japan

6.1 3i operates subsidiary companies in France, Germany, Italy and Spain, an associate in Japan with IBJ and our former USA, 3i Ventures, business with Aspen Partners. 3i's interest is in SMEs (broadly defined as independent businesses with less than 500 employees) and we have recently commissioned a report to review the economic performance of this sector of UK business. International comparisons show SMEs account for 32 per cent of non-primary private sector GDP in the UK compared to a figure approaching 50 per cent in the United States and Germany and 60 per cent in Japan.

6.2 In Germany the majority of our investment is in MBI/MBOs for management succession. The present portfolio is almost entirely based on manufacturing. The most significant difference between UK and German management is the academic training undertaken by German managers. Higher technical qualifications and second degrees in business or commerce are far more common amongst managers in the SME sector than in the UK. 3i has no absolute measures—our observation comes simply from our own experience in dealing with 35- to 45-year-old managers in each country.

6.3 There is also a difference in gross margins arising from higher pricing of German products. It is this extra few per cent and stable interest rates which allow companies to service the higher levels of debt common on SME balance sheets in Germany.

6.4 We see little significant difference between SME businesses we finance in France and those in the UK. There is a more developed venture capital market than in Germany. National and regional support is also more obvious in France. Anvar is a national agency for research grants and for "0 per cent redeemable loans" available to technology based SMEs. Regional councils also support local ventures although on a very much smaller scale than Anvar. Most of the larger banks now have small venture capital subsidiaries. Innolion and Altus, subsidiaries of Credit Lyonnais, have been willing to invest as syndicate partners in four high tech companies financed this year by 3i in the UK.

6.5 In the USA venture capital is well established although on a variety of measures the amount invested per capita is less than in the UK. There are few large venture capital partnerships and 3i's subsidiaries in the USA rapidly established themselves amongst the leading firms. The big difference is the culture—managers are both technically and commercially able, allowing the investor and investee teams to work harmoniously together. In many sectors of technology world class skills are all available in one location and whilst individual SMEs may succeed or fail the local expertise is continually improved.

7. General conclusions from 3i experience

7.1 **The Enterprise Culture and Management Skills.** When 3i first financed Management Buyouts in the late 1970s, our worry was that managers could not become entrepreneurs! We were wrong, the Enterprise Culture grew fast. In 1989 3i extended the concept further with the Management Buy In programme and now we run a Non-Executive Director resource. This desire by professionally trained and experienced managers to take part in the ownership and direction of SMEs is very encouraging. Whilst the culture may not match parts of the USA, we are ahead of the rest of Europe. Unfortunately this improvement is not reflected in other areas where human resources are critical.

7.2 We carry out regular surveys of our customers and have in the past asked about their concerns regarding skill shortages. At the time of peak activity, a high proportion of our clients believed that the shortage of skills in general was very serious. By 1990 only one quarter rated skill shortages as very serious, although all believed that they would become more so. We have probably never declined to make an investment on the grounds that shop floor skills were not available and believe that the modern tendency is to engineer out the need for such skills (and shop floor flexibility is desirable). It is however reasonable to believe that a shortage might develop in certain areas if there was a serious increase in industrial activity from this point.

7.3 The situation with middle management technological skills is less clear cut. A shortage of sufficiently able, well trained technologists certainly appears in many small businesses. We believe that many overseas countries have a stronger technological base, particularly below graduate level, which is of direct relevance to small firms, but we believe that it is more likely that failure to manage and use the available resources properly is the immediate shortcoming in this area.

7.4 When we have declined to invest it has mostly been due to perceived shortcomings in general management and we believe that the shortage of good practical management is most notable in larger companies, some of which are in the traditional heavy industries.

7.5 **Market Constraints.** Whilst 3i is a long-term investor we do need to realise investments. The liquidity problem in private equity applies to all owners of shares in private companies who want to realise some or all of their holdings, not least the managers whose motivation and performance can be stirred by the prospect of ultimately realising their shareholdings and making substantial capital gains. The problem is acutely shown up amongst those suppliers of venture capital who rely on the achievement of a realisation, or "exit", within five to 10 years.

7.6 In round numbers the UK venture capital and investment capital industry is investing at a rate of £1 billion a year, which represents annual funding of over 1,000 companies. It is a high rate of investment. This vast portfolio of individual equity stakes is supposed to be ultimately realisable at a profit, and the management teams who have been backed by this investment will have also banked on eventually making a decent capital gains from their own shareholdings. The truth is that the rate of realisations from such investments recently has been disappointingly low overall though there continue to be the odd spectacular flotation or trade sale.

7.7 This illiquidity was starkly evident in 1991 when the level of divestment of British venture and investment capital stood at only 4.5 per cent of the cost value of the entire portfolio.

7.8 Various methods which might increase liquidity in the private equity markets have been put forward recently. Apart from last-minute pleas to keep the USM, there has been a call for a new second tier market along the lines of the USA's highly successful NASDAQ market. (Over the last five years 36 per cent of all venture backed IPOs (companies which have gone on to an initial pulic offering) in the US have been medical/health related or computer/software/communication/electronic companies). The suggestion is that this market should not be managed directly by the Stock Exchange but come under separate governance and be cheap and easy to use. Other ideas have included setting up a private equity exchange run by venture capitalists where shares are put up for sale with the support of proper prospectuses. In the Netherlands the venture capital community has set up a twice-yearly market where shares are put up for auction and institutions invited to bid.

APPENDIX I

ABOUT 3i

3i is a unique financial institution. It was founded in 1945, with the Bank of England and the London clearing and Scottish banks as shareholders. The principal objective was, and remains, to provide investment capital to those companies, particularly small- and medium-sized companies, which do not have ready access to capital markets.

Over the years, we have opened offices in most of the main commercial centres in the UK in order to serve our principal market better. When economic conditions have given us the appropriate opportunity, we have provided long-term investment capital to larger national and international companies who have not, for various reasons, had ready access to the traditional capital markets.

In the past decade, we have expanded internationally in developed countries where we perceived there were similar capital market imperfections.

Today, 3i remains a company whose business is investment. We have in-house the distinctive blend of financial and industrial skills necessary to evaluate the investment opportunities in our market sector. We invest in companies which range from small start-ups through growing businesses to major national and international concerns. We are long-term investors and have held investments in some of these companies for many years. Because we raise and invest our own funds we are extremely flexible. Individual investments are normally in the range £20,000 to £5 million and have on occasion exceeded £50 million although usually we combine with others to fund large projects. What characterises 3i is the way we do business. We work with people to develop imaginative responses to business opportunites and share the risks in realising them.

Principal shareholders

		Per cent
Bank of England		14.61
Bank of Scotland		3.03
Barclays Bank plc		18.35
Lloyds Bank plc		13.33
Midland Bank plc		17.54
The Royal Bank of Scotland plc		7.38
National Westminster Bank plc	22.37	
Coutts & Co	0.68	
		23.05
		97.29

The remaining 2.71 per cent of the share capital has been issued to the Group's employees and executives.

APPENDIX II

ANALYSIS OF 3i INVESTMENTS

By Industry Sector

	1992 Total		1991 Total		1990 Total	
	£ Million	Per cent	£ Million	Per cent	£ Million	Per cent
Agriculture, Forestry and Fishing	14	0.5	10	0.4	11	0.5
Energy and Water	27	1.0	21	0.9	23	1.0
Mining and Quarrying	16	0.6	18	0.8	9	0.4
Metal and Mineral Manufacture	91	3.5	104	4.2	108	4.6
Chemical and Manmade Fabrics	66	2.5	80	3.3	85	3.6
Mechanical Engineering	281	10.8	219	9.1	117	5.0
Manufacture—Office Machinery and Data Processing	19	0.7	20	0.8	30	1.3
Electrical and Electronic Engineering	91	3.5	95	4.0	93	4.0
Vehicles and Transport Manufacture	50	1.9	43	1.8	48	2.0
Instrument Engineering	28	1.1	40	1.7	28	1.2
Food, Drink and Tobacco	118	4.5	95	4.0	98	4.2
Textiles and Leather Goods	51	2.0	46	1.9	37	1.6
Clothing and Footwear	29	1.1	24	1.0	24	1.0
Timber and Furniture	33	1.3	32	1.3	50	2.1
Paper, Printing and Publishing	119	4.6	107	4.5	121	5.2
Other Manufacturing and Repairs	104	4.0	102	4.3	69	2.9
Construction	64	2.5	80	3.3	40	1.7
Wholesale Distribution	272	10.5	234	9.8	178	7.6
Retail Distribution	161	6.2	154	6.4	187	7.9
Hotel and Catering	155	6.0	126	5.3	121	5.2
Transport and Communication	136	5.3	109	4.6	90	3.8
Financial and Other Business Services	386	14.9	406	17.0	379	16.1
Health, Education, Community Services	49	1.9	47	2.0	39	1.7
Recreational and Personal Services	29	1.1	26	1.1	35	1.5
	2,389	92.1	2,238	93.5	2,020	86.1
Other Assets	207	7.9	156.	6.5	328	13.9
Total	2,596	100	2,394	100	2,348	100

APPENDIX III

Technology based 3i portfolio companies which have floated 1984-1993

A H Ball Group plc
Acal plc
Aerospace Engineering plc
Alphameric plc
Apollo Metals plc
British Biotechnology Group plc
Cifer plc
Communication Systems Inc
Continental Microwave (Holdings) plc
Domino Printing Sciences plc
Ethical Generics plc
Ferrari Holdings plc
Holliday Chemical Holdings plc
Industrial Control Services plc
International Food Machinery Ltd
ITL Informationa Technology plc
Leica Cambridge Ltd
LSI Logic Corporation
Medeva plc
Microvitec plc
Penny & Giles International Ltd
Pericom plc
Plasmec plc
Platon International plc
Quality Software Products Holdings Limited
Rodime plc
Ross & Catherall plc
Sanderson Electronics plc
Sherwood Computer Services plc
Swallowfield plc
Tadpole Technology plc
Technology Project Services plc
Telerate Inc
The Oxford Instruments Group plc
The Victaulic Company plc
Wayne Kerr Ltd

APPENDIX IV

UK equity investment statistics—3i v. BVCA

	BVCA no's	UK 3i no's	3i share Per cent	BVCA £ million	3i £000's	3i share Per cent
Communications	20	1	5	23.2	470	2.0
Computer Related	82	33	40	30/3	10,255	33.8
Electronics Related	59	32	54	19.4	7,832	40.4
Medical and Genetics	46	9	20	41.8	4,329	10.4
Energy/Mining	15	6	40	125.2	6,322	5.0
Consumer Related	286	123	43	396.0	57,197	14.4
Industrial Products	177	67	39	158.8	33,628	21.2
Transportation	30	11	37	82.1	11,526	14.0
Construction	58	21	36	52.9	8,369	15.8
Other Manufacturing	149	109	73	115.9	43,233	37.3
Other Services	225	138	61	205.2	92,403	45.0
Total	1,147	550	48	1,250.8	275,564	22.0

APPENDIX V

Product Positioning Map

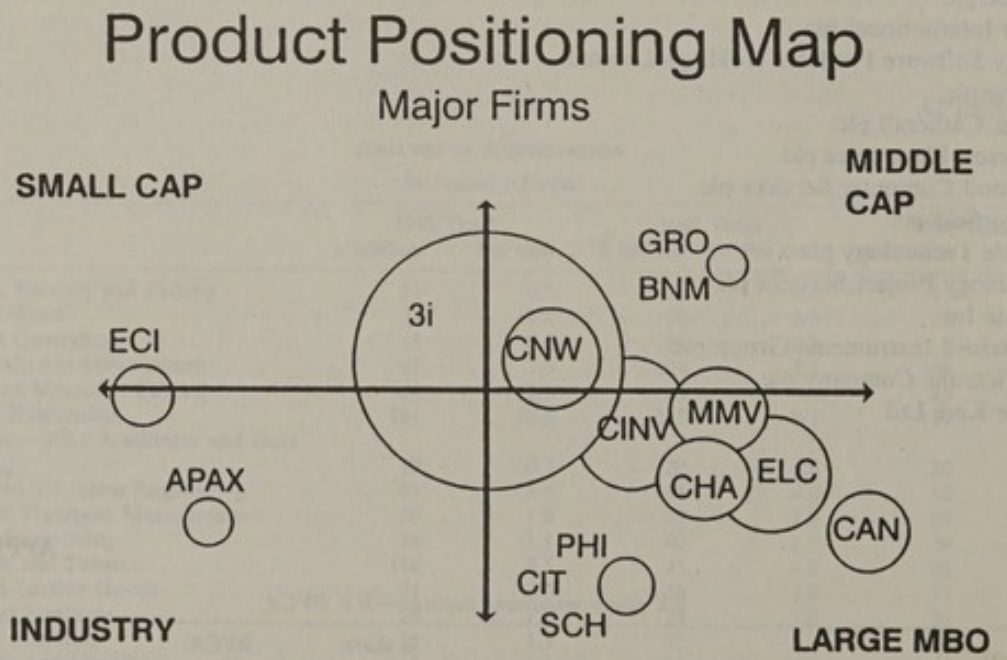
The Product Postioning Map puts into graphic terms each of the major investment and venture capital firms investment strategy and market share for the three years ended 1991.

- The four areas between each of the axes represent four product segments—small market capitalisation investments, middle market capitalisation investments, large management buyouts and industry focused investments.
- Each firm's circle is placed in its primary product segments.
- The size of each circle indicates a particular firm's market share relative to the other investment and venture capital firms.

3i is the only firm with a substantial presence in all market segments.

Key

Short Name	Fund	Funds Available 1991 £ million
APAX	APAX	115
BNM	Baronsmead	25
CAN	Candover	250
CINV	CINVen	Unlimited
CHA	Charterhouse	200
CNW	County Natwest	Unlimited
ECI	ECI Ventures	80
GR	Granville & Co	50
GRO	Grosvenor	5
MMV	Midland Private Equity	Unlimited
PHI	Phildrew Ventures	30
SCH	Schroder Ventures	180



APPENDIX VI

A PHOTO BIOREACTORS LIMITED

3i first provided seed corn finance for this business in early 1986. This was to determine if the technology, developed by Professor John Pirt, Kings College London, could be scaled up to a full production unit, and if the products could be marketed.

The chosen area of business was the generation of naturally produced fine chemicals from algae for use in the food, pharmaceutical and animal food areas. B-carotene was the primary product target. This is an

orange-yellow coloured chemical which is produced from the algol species known as dunaliella. It is used as an orange or yellow colorant in foods (e.g., margarine, baked beans and chicken) and beverages (orange squash). Recent consumer trends have encouraged manufacturers to move away from tartrazine and other "artificial colorants" towards naturally sourced additives of which there is a shortage.

The photobioreactor process is a virtually closed system production unit. It consists of banks of 1 cm diameter clear plastic tubing linked to an air riser system. The algae are introduced into this system and fed on a combination of trace elements and carbon dioxide, sunlight being used during the process. As most of the technical value was in the "know-how", it was decided not to pursue process patents.

Competitive technology came from the open pond method of production. Essentially this involved substantial acreages of concrete waterways, open to the air, in which the algae were allowed to grow. The system suffered from the disadvantages of a high initial cost, unwanted algae strains growing in the pond, together with quality problems arising from bacterial and insect contamination. There was also the situation that harvesting had to be carried out seasonally.

The market size was thought to be in the £30-£50 million region with virtually all of it being supplied via a synthetic route, primarily through Hoffmann La Roche. However, it was expected that the market would grow overall by 10 per cent to 12 per cent pa but that the natural version would grow much faster over the next few years, potentially taking the majority share.

Professor Pirt had achieved world eminence in his field of algae and its growth but had no experience of managing a company. 3i introduced two managers who had successfully developed and sold a medical business.

The business plan proposed the development of a series of pilot plant bioreactors. It was clear that significant risks remained in terms of the viability of the scale up. However, there appeared to be no inherent reason why such a larger facility could not be made to function satisfactorily, although the efficiency of the production facility would not be known until it had been built. A marketing agreement was also requested with Hansen Laboratories, Denmark. This is a world-wide business supplying the dairy and food industry.

The final plant required a location with prolonged sunlight and a site in Spain was found, it was not known whether or not the stronger light intensities in Spain would produce the higher level of B-carotene in the algae as anticipated.

The overall funding was £3.5 million. 3i invested £1.3 million, Euroventures £750k, and £1.5 million was raised as loans and grants including local investments in Spain.

There were problems with the first attempt at production "scale-up" which were attributed to poor resources. There was a management reorganisation and a rescue plan for the second attempt. Unfortunately, this also failed and this time the pilot plant indicated a serious problem in the application of the technology. While there was a chance that the third attempt might be successful, the risk of failure was considered too high to continue funding.

The company failed in 1992.

B Domino Printing plc Elmjet Ltd and Xaar Ltd

Inkjet printing is a non impact method of printing achieved by the controlled deposition of ink droplets onto a substrate. As the name implies, ink in the form of a jet or drop is propelled from the head of the printer and "directed" to hit the surface of the substrate at the required position, forming part of the character or symbol to be printed. The initial concepts were developed by Cambridge Consultants in the late sixties but then abandoned by the industrial sponsor. Inkjet offers low equipment and running costs, high speed, and the ability to print on a wide range of substrates, even on uneven surfaces.

The first applications were in the marking/coding of packaging for food, cosmetics, beverages, pharmaceuticals, etc., (e.g., the sell by dates), in printing bar codes and printing of address labels. Only recently has Inkjet become prevalent in the office marketplace with the launch by Cannon and Hewlett Packard of the "Bubblejet" products.

3i backed a family of companies Domino, Elmjet and Xaar from our Cambridge Office. All are different in technology, stage of development, level of sophistication, and market addressed.

	Domino	Elmjet	Xaar
3i first invested	In 1979 as a start-up (after company won our TDC Innovator Award). £100k invested for 28 per cent of equity. Company's net tangible assets prior to our investment were—£20k. Turnover year one £82k, loss £105k.	In January 1988 we invested £500k for 19 per cent of equity to help product development, marketing and establishment of manufacturing facility.	In 1990 we invested £350k for 25 per cent of equity, towards purchase of ink jet technology from AMI and to further its development.
Number of Further Investments	August 1980 £30k 1983 £240k 1983 £180k Floated in 1985	February 1989 £500k March 1990 £250k July 1990 £250k 1992 £90k 1993 £50k	October 1990 £150k October 1991 £525k May 1992 £200k
Company History	1979-84—Start-up phase. Lots of growing pains. Team strengthened on several occasions. 3i appointed non-executive director December 1980. 1984-85—Team considered complete—floated in April 1985. 1985-87—Made significant American acquisition which doubled company's turnover but proved difficult to manage. This led to more management changes. 1987-Current—Company growing significantly. Profitability continues to increase.	T/O PBT 1988 £226k (£412k) 1989 £252k (£948k) 1990 £644k (£1,670k) 1991 £1,111k (£1,700k) 1992 £3,574k (£450k) 1993 £2.5m (£950k) The recession adversely affected 1992-93 results.	1990—Financed by 3i and Prelude as a seed capital start-up. 1991—We introduced a syndicate of European investors. First technology licence signed up with Brother Industries, a major Japanese printing manufacturer. 1993—IBM licence agreement signed whereby IBM will manufacture Xaar's print head. T/O PBT 1990 nil (£2m) 1991 £262k (£900k) 1992 £1.4m (£500k)
Number of Employees	820	60	26
Exports	84 per cent of turnover	75 per cent of turnover	100 per cent of turnover
Current Situation	World market leader in industrial ink-jet coding. 3i still a minority investor 14 years after we made our first investment. 1992 turnover—£72m PBY £11.9m NTA £48.4m	Company's product is now firmly established in the market place. However the cost of developing further products is likely to considerably exceed any profits generated from existing product. The company is at a stage in its development when it needs to merge with a larger corporate entity which can help fund its growth. Shareholders have just accepted an offer from GEC to buy the company for £9.5m.	Company recently received second place in the Prince of Wales award for technical innovation as screened on BBC's Tomorrows World. Unlike Domino and Elmjet company doesn't intend to manufacture its own product but instead licence out manufacturing to various key industry players. Company is currently progressing very well.

C SEALAND INDUSTRIES PLC

3i funded by the MBO of this business in November 1987—it was effectively a start-up in 1985 by FC Lloyd plc.

It was a small company employing 42 people and based in Cumberland. The company's main products are wellhead systems including christmas trees, chokes, clamplocks and electrical feed-through systems. The company was targeting a sector of around £35 million-£40 million and was competing with a number of recognised major forces. However, Sealand started well, with the good image of delivering on time.

By implementing a regular technical review and responding well to customer requests the company started to gain technical advantage. Although there was a hiccough in late 1988, following the Piper Alpha disaster, sales volumes grew fast. In well head equipment a clever design for a valve put the company ahead of the competition. Chokes became the company's flagship product with the unit being technically superior to most of the competition.

Throughout this period, 3i made three further investments in the company to support its rapid growth, After the initial equity funding of £1.1 million 3i held 45 per cent of the equity, the management 55 per cent.

Further debt funding of £800,000 included a government guaranteed Loan Guarantee Scheme loan and fixed rate deep discounted loans (in which a capital premium is paid with the last capital redemption). These novel debt instruments allowed the additional working capital to be provided with minimal security and without further diluting the shareholders.

In 1992 the Directors received an unsolicited offer for the business from VSEL plc. Their decision to accept reflected the advantages of the further support (financial and in marketing) offered to see their business grow and the capital gain on their shares. 3i doubled its money on the initial share subscription of £1.1 million.

D B E Wedge Holdings Limited

3i first invested in this family owned company in 1958. Today we hold 35 per cent of the equity, the family 53 per cent and employees and managers 12 per cent.

This Group specialises in hot dip galvanising with five plants in the Midlands, South East and South West. The North is covered through a join venture with RTZ, Piller-Wedge Limited. Wedge has 11 per cent of the UK galvanising market and, along with Ash & Lacy and Pillar-Wedge dominate the market.

Wedge expanded into Europe acquiring a 36 per cent stake in Galvan SpA in 1989. In 1992 Germany appeared an attractive market following reunification with significant new investment planned in infrastructure. Wedge, with support from 3i's German office acquired from Hoesch (Germany's largest steel company) its galvanising business. This is one of the four largest galvanisers in Germany and is well positioned to take advantage of growth in the market.

Although Wedge is not a large company (1991-92 UK turnover £15 million) it has consistently developed its technical expertise and is now recognised as one of the most efficient galvanising business in Europe. Between 1958 and 1992 it achieved an unbroken record of turnover and profit growth; margins reflect the technical and production efficiencies and the company has no borrowings.

In view of the size of the acquisition in Germany, 3i provided an unsecured deutschmark investment both in the UK and locally from 3i's Frankfurt office. In a few years this will be a European business, based on its technical excellence.

E Calluna Technology Limited

Calluna had been started by ex-Rodime employees in Glenrothes to design, manufacture and sell micro miniature computer disk drives. 3i lead £3.0 million of syndicated institutional investment. The company is led by founder Dr Norman White, a Scottish engineer with a mathematics and theoretical physics background.

The company's objective was to design and manufacture a credit card sized 80 MByte disk store. The disk met the new international standard for plug-able memory aimed at the new generation of small "palm" and "note book" computers. The company developed a working prototype and interest was shown from international manufacturers who took evaluation units as soon as they were available. Initial production has been produced in a 25,000 sq ft facility in Glenrothes.

The market for lighter, smaller and more powerful personal ("palm top") computers has continued to grow faster than the overall PC market at 30 per cent per annum during the last two years despite the recession. Total world demand is estimated from various sources to be in the range of six to eight million units during the next five years. Design demands on mass storage devices (which hold programs and users' data) have concentrated on greater storage capacity, smaller size, and lower power consumption. These requirements can all be satisfied by disk designs that use a 1.8 inch disk format. This allows an 80 MByte capacity to be accommodated in a credit card sized device 10 mm thick. In addition, a new international standard, called PCMCIA, has defined a socket format that will allow such a drive to be inserted and removed from the PC by the user.

Potential competition for 1.8 inch drives comes entirely from seven US-based companies. All have announced plans for 1.8 inch drives but only two, Calluna and Conner, meet the new standard, so important for compatibility. Conner, however, have an excellent design team and represent serious competition for Calluna. Of the other manufacturers (IBM, Ministor, Aura, Seagate and HP), Seagate and Ministor could be a threat but are at least 12 months behind Calluna. HP have a non-standard form factor and IBM, although a long-term threat, will take several years to get into full production.

3i led a syndicate including Scottish Enterprise and Innolion to provide the initial £5 million funding. In addition Kanematsu, a Japanese electronic trading house, provided some seed corn finance and arranged to place prototype units. A DTI SPUR Award, a Regional Innovation and Enterprise Grant and Regional Selective Assistance helped, together with overdraft facilities from Clydesdale Bank, to complete the funding.

This is a high risk project in which timing and the technical direction taken on portables will significantly influence the outcome. Technical excellence will be no guarantee of success. We will know whether the company will be successful in the next year.

Memorandum submitted by Lloyds Bank plc (17 June 1993)

Q1. *Can you give an indication of market share of business lending held by your organisation?*

A. Direct comparisons are difficult because banks are structured in different ways.

Our policy in Lloyds Bank is to structure our services to reflect the needs of our chosen markets. Consequently, we service the non-personal market through three distinct ways:

(a) *Corporate Banking* is structured to meet the demands of large corporate and multi-national companies whose activities will often have an international dimension. Customers include well known names, many of whom make large investments in research and development. Typically such companies will have a turnover in excess of £50 million per annum.

(b) *Lloyds Bank Commercial Service* provides a range of banking and financial services and products to medium sized businesses in the UK. Separate from the branch network, specially trained teams of managers and account officers deal with the needs of commercial customers typically meeting customers on their premises. Businesses will usually have an annual turnover between £1 million and £50 million.

(c) *Lloyds Bank Business Services* provide a wide variety of services and support for businesses with a turnover from anything up to £1 million per annum. The services are delivered through 360 Business Centres located in the branch network, each staffed by specialists.

It is reckoned that Lloyds Bank has a 15 per cent share of the UK business market.

Q2. *What is your general lending policy?*

It is our policy that, as far as possible, lending decisions should be made by those with local knowledge. Over 90 per cent of lending decisions are made by local managers in LBCS, Business Centres, branches and regional offices. Corporate Banking is structured in such a way so that account teams work closely with clients in order to gain an understanding of their business requirements.

Q3. *What is your lending policy to companies in innovative industries? Have you any specific mechanisms for assessing the risk of high-technology ventures?*

A. Our prime concern is with the viability of the business, not so much with the nature of the business. Our decisions are based on the appraisal of the overall management calibre of the business and its potential for cash generation and profitability.

Technical knowledge is an asset in management evaluations and, obviously, the potential for any business to do well is a positive factor in our risk evaluation.

However, in our experience, there is a danger that innovative management can neglect more broad-based responsibilities, including financial management, and there is sometimes a reluctance to share their ideas with potential partners who have complementary business skills.

Q4. *To what extent does a firm's innovative potential influence your lending decisions?*

A. Many of our large corporate customers are leaders in innovation and technological developments. At the other end of the scale, we find that the small businessman will often not have significant resources or R&D material to support innovative ventures, which means they are often higher risk.

Innovation can mean entering areas where past track records are either not available or are of little guidance, which means great stress has to be placed on the quality of business planning skills. Technology based businesses are particularly difficult to predict, especially with development costs and timescales, with a much higher volatility of outcome in comparison with a conventional enterprise.

Q5. *To what extent, in your opinion, does policy in the UK differ from that in other countries?*

A. We are unable to speak authoritatively on the practices of other countries in comparison with the UK. Where business climates encourage the recognition that innovators need broader management skills at the outset, we believe there is a greater chance of their success. The USA is often cited as an example and we believe there is a degree of truth in this.

Examination of Witnesses

DR RICHARD SUMMERS, Director, 3i Group plc, MR JOHN KIRKPATRICK, Chief Industrial Adviser, 3i Group plc, MR DAVID HARRISON, Senior General Manager, Corporate Banking, Lloyds Bank plc, and MR MICHAEL RIDING, General Manager, Commercial Service, Lloyds Bank plc, were examined.

Chairman

387. Thank you very much. I am sorry you have been kept waiting a little longer, I am sure that has given you even more time to get used to answering the questions. You are most welcome and I am very glad that you have agreed to come together, though obviously you operate separately in this field and we are glad to be able to spend a session on the question of venture capital and investment in technology and in new business. I welcome Mr Kirkpatrick and Dr Summers from 3i and I welcome Mr Harrison and Mr Riding from Lloyds Bank. Might I say at the outset, my colleague Spencer Batiste who works for Dibb Lupton Broomhead, a law firm, may have had some connection at some time with any one of your substantial branches or activities and declares his interest. Apart from that, you know we are inquiring into the routes through which competitive and innovative technology is drawn from the science base and you equally know that we have taken evidence now from a range of institutions including the venture capitalists themselves and the Association of Venture Capitalists. May I start off then by asking a general question: we have, as I have just said, talked to venture capitalists about their roles and banking has a far longer history, I would judge, than venture capitalism though some people might recognise they were probably the first venture capitalists in days long gone by. The co-operation of the banks in forming 3i suggests that the banks see venture capitalism as complementary to their role. Perhaps you would now describe what you think their roles are? Perhaps we could start with Lloyds.

(Mr Harrison) I think, Chairman, the first point perhaps one should make is I think when you speak to 3i they will suggest they are development capitalists rather than venture and that will be a distinction they will wish to draw.

388. Perhaps you might explain precisely those differences?

(Mr Harrison) I would not wish to speak for 3i but perhaps speaking for Lloyds Bank, we own a company called Lloyds Development Capital and that parallel could be drawn. I think the basic difference would be that the development capital company invests in companies which already exist and where there is some degree of proven track record and where what you are doing is providing additional capital for expansion—possibly into innovative but possibly not—fields but where new equity is required whereas a venture capital company is more probably involved in start up situations where there is no company at all. That would be a definition of the difference between the two.

389. Right. Thank you for that. Dr Summers?

(Dr Summers) Chairman, can I go, I suppose, into a little bit more detail on that because we do invest in start ups and therefore you might link us with venture capital. The difference, we would like to put forward, is that when we invest we do not have a predetermined exit time because we are not running a fund and that is evidenced by the fact that we have been in companies for 20 years or more. Secondly, we do not put our staff on the board of the companies. I think fixed exit and the membership of the board are features you see in venture capital. It is an active, hands on partnership with elements of control. That is our difference.

390. Those are the differences that you have established over time?

(Dr Summers) Yes.

391. What about the retail element, the retail element of banking, for example, in relation to development capital or indeed venture capital?

(Mr Harrison) Could you possibly define what you mean, Chairman?

392. The mainstream banks. You have separate arrangements as you have described it for development capital or venture capital, you invested in 3i and you equally have a network of retail branches which, as we have heard from many people, is the absolute lifeline for small innovative companies. That must surely be a large part of your normal retail activities?

(Mr Riding) Yes, indeed it is. The bedrock of our commercial banking business is through the branch banking network and then up into our middle market groupings. That certainly we would not describe as being venture capital.

393. But development capital would come into that?

(Mr Riding) Well development capital may well come into it at some stage with companies that we have nurtured to a certain size, as Mr Harrison described. We certainly would not be looking to invest per se as equity holders in start up companies which I would define, like him, as being the true venture capital role.

(Mr Harrison) Just in case there is a misunderstanding: the development capital to which Michael Riding refers would not come from the bank, if it did come it would come through the subsidiary specialist company called Lloyds Development Capital in our case. We would not provide equity money through a branch of a retail bank.

394. Right. But a customer of your retail bank in innovative business would find a route to the development bank of Lloyds and would get involvement in that way, is that right?

(Mr Harrison) Yes, not frequently. It is fair to say there are not very many customers involved.

395. There are not many customers involved?

[**Chairman** *Contd*]

(Mr Harrison) No.

396. It is not a growing and important area of your business?

(Mr Harrison) No.

Sir Trevor Skeet

397. But other banks are a wee bit nervous about these commercial enterprises, which deal in technology. They could be termed the life blood of the country and in The Sensor there are some figures which are rather interesting. They talk about the effectiveness of the commitments to venture banking as it compares with commercial banks and apparently it is the venture capital which is regarded as giving the superior service and the figure is 68 per cent. Surely it is other banks making a contribution where they should make it to the economy?

(Mr Harrison) I read that figure too. If you are looking for risk capital, I hope that 100 per cent of your respondents will find the clearing banks unhelpful in terms of a branch, commercial branch, which is lending money to companies. I think that if 68 per cent of them find the venture capital companies are helpful that is a very encouraging sign but certainly they would not be expected to look to a deposit financed organisation to provide them with equity capital.

Dr Bray

398. Could we just get the broad perspective, orders of magnitude, clear in our minds. The assets of Lloyds are £61 billion and of 3i £3.4 billion. These are figures from your own report. The number of staff is 755 in 3i and 63,000 in Lloyds Bank. So the assets handled per member of staff are £4.5 million in 3i and £1 million in Lloyds, that obviously reflects the true character of the business.

(Mr Harrison) Yes.

399. Does it possibly also reflect the future trends in employment?

(Mr Harrison) You are ahead of me, Sir, could you possibly expand?

400. Lloyds considered a bid for Midland during the last year on the grounds there was gross excess capacity in retail banking in the UK, of which the consequence would have been an enormous reduction in staff. If, as I gather, it is Lloyds' view that position still exists then that will be the direction of the development of the business in future?

(Mr Harrison) As you are aware we failed to succeed in our endeavours so I have no reason to suppose that that will be the trend in future.

401. The amount of new investment by 3i in 1992 was £424 million, of which the total that went into manufacturing was 42 per cent, which compares with a manufacturing share of GDP of only 21 per cent, so you have twice the concentration in manufacturing. Can you tell us what the position is in Lloyds? Your annual report is very much less informative than the 3i's.

(Mr Harrison) As to the proportion of our lending that is in manufacturing, is that the question?

402. Yes.

(Mr Harrison) I can certainly provide you with that. We do not make a secret of it. It is a figure that is available and it is reported to the Bank of England on a monthly basis. I would not want to give you an unreliable statistic now.

Chairman: Perhaps you could write to the Clerk with that?[1]

Dr Bray

403. 3i has, I think it is called, an industry department staffed by industrial and accounting advisors of which I understand 13 are qualified engineers and scientists with managing director or general manager experience recruited in their 40s?

(Dr Summers) Yes.

404. Does Lloyd Bank have any equivalent staff?

(Mr Harrison) No, we do not. The reason for that I suggest, but again I am in danger of speaking for 3i, if you are going to take an equity investment, you have a very strong interest in the on-going profitability and growth and, above all, the return on equity that would be involved. Your position is quite different from that of a banker who is interested in the cash flow of a business and whether his loan is safe. In order to do that I suggest you need to be a trained banker rather than necessarily a trained industrialist. That is the reason why we would not employ a department of industrialists.

Chairman

405. Presumably that is one of the reasons why you helped set 3i up in the first place?

(Mr Harrison) Certainly the fact we have not only an investment in 3i but our own development capital company is because that is a specialist market.

406. Risk of a different quality.

(Mr Harrison) It is not a banking business.

(Dr Summers) Chairman, could I make a point about the productivity per person and the scale of the investment? I think if you analyse those figures you will find our average investment is about half a million pounds. That is an investment we will put in for many years and it is in a venture which depends on future growth to actually generate return on that money. So as far as productivity of our staff goes, we do not have to be in daily contact with the company as you might be if you were running an overdraft. We can spend a couple of months looking at it and we put that money in for 20 years, so it is a very different activity from a clearing bank and it needs different skills too. We have little control over that capital investment once we have put it in. In addition the business that we have financed is facing competition and facing economic changes. So it is a very different game that we are playing.

[1]See page 115.

[**Chairman** *Contd*]

(Mr Riding) I think also, Chairman, when you look at the banks and you make that sort of calculation, certainly if you take the bank overall, then you get the kind of figures that were quoted in terms of the numbers and the amount of lending that relates to the number of people involved. But, of course, at different points in the banking organisation you will get a very different answer. In the part of the business that I am responsible for, for example, the number would be very much higher in terms of the lending per person—that it is in the smaller corporate market. In Mr Harrison's area of the business it would be higher still because that is in the large corporate market.

Dr Bray

407. In terms of share of manufacturing in the economy, I said just now it is 21 per cent of GDP, manufacturing only accounts for 13 per cent of UK gross domestic fixed capital formation. The annual rate of investment means that in fact the average life of plant being invested in at the moment in manufacturing is 22 years. Is that an adequate level of investment?

(Mr Kirkpatrick) Well, it obviously depends on which industry sector you are looking at, in general it would not be. I think if you look at most of our portfolio and the companies that we are investing in in manufacturing, we are actually trying to make those investments in those companies to bring them up to the world class performance that they need to be to be competitive in this day and age. I think any company at the moment that is using a 20 year life on some of its plant, unless it is some major capital plant, of the very long term nature is on the downward path, I am afraid.

408. Although manufacturing or overall capital investment in the UK at 18 per cent—compared with 22 per cent in France, Germany and Italy and 33 per cent in Japan— is very much below international standards, nevertheless at 12.7 billion pounds a year in a low year in 1991, 3i accounted for only 1.4 per cent so it is a very small part of total manufacturing investment.

(Mr Kirkpatrick) I think what you will find is in our presentation you will see a high percentage, very nearly half of our investment, is in what we call follow on investments in companies we have already got investment in. Very frequently those investments are to help companies re-plant so in fact I think you will find if you do the figures that is a bigger percentage.

Dr Bray: It still remains small by comparison with the overall investment of whatever kind.

Chairman: I think that is recognised, is it not?

Dr Bray: Can I just ask one final question: in the report to shareholders you said: "Lloyds' strategy is to focus on things we can do well and strive to do them better than anyone else".

Chairman: A splendid sentence.

Dr Bray

409. The activities in which Lloyds feels it does well, particularly, picked out in your report were personal banking and life insurance. As a nation is that not a bit like taking in your own washing?

(Mr Harrison) Can you say it clearer? I missed the last sentence.

Chairman

410. Personal banking and life insurance.

(Mr Harrison) You said is it not like something?

Dr Bray

411. Taking in your own washing?

(Mr Harrison) We have 5 million customers

412. These are activities where we have genuine competitive advantage.

(Mr Harrison) And we have 66,000 staff, so presumably we are taking in somebody's washing.

Chairman: I think that is a not unreasonable statement. Can we turn now to the referrals to venture capitalists.

Mr Batiste

413. Take the case of a small business that is an existing customer at Lloyds Bank which wants a major expansion in its activities, maybe in a new direction, maybe new plant and equipment, has used the bank for a long time and has the sort of relationship which I presume you would be fostering, a close working relationship, an advisory relationship between the manager and the businessman. He comes along and it is clear that what he needs is an injection of capital, whether he needs loan finance as well is another matter. There is a need for an injection of capital. To what extent would you expect his normal point of contact, i.e. his local bank manager, to be a source of good advice to him as to where he should be going to get the capital element of the package he needs or even advice about where he can get the package he needs and how would your answer be different if it was someone who came in off the street and was not an existing customer of the bank?

(Mr Riding) If I could take the second point first, if I may. In terms of taking business coming in off the street, as you have described it, we always tend to look carefully at new proposals which come to us from whatever source and where customers are looking to move into our bank from another bank, they tend to be appraised very carefully, which is not to say that they would be appraised in any negative way particularly but you would certainly look carefully. Going back to your first question, if you are talking about a customer who has been a good customer of the bank for a period of time and where we have had satisfactory experience on both sides, then I would expect that we would be in a position both to offer the kind of financing he required from that point of view in terms of looking out into the future and also, if appropriate, we would be either

[**Mr Batiste** *Contd*]

introducing them to our development capital company or possibly suggesting an alternative source of capital if that was appropriate. We do introduce business to 3i, for example.

414. You regard them not as a subsidiary but as an associate?

(Mr Riding) We regard them as a financial institution with whom we work to our mutual benefit. We have a lot of customers and clients in common. Now the level of introduction or the frequency of introductions between us obviously depends to a certain extent on working relationships at local level as it would always do in that circumstance.

415. The businessman would expect, and you would expect of a local bank manager, that sort of advice would be available, that direction finding, for what he needs?

(Mr Riding) I think, if I may, I would like to look at different parts of the organisation spectrum. As I think the Committee is perhaps aware, in our bank we have our business banking divided into three areas specifically because we believe it is effective to focus on particular parts of the market. Mr Harrison looks after the large corporate banking end, I am responsible for the middle market which looks after customers who have sales of more than a million pounds up to around the £100 million figure and then we have what we call our business banking which is looked after by managers in branches. The expertise, in terms of looking after that corporate requirement, tends to get greater the lesser number of companies people look after and the further up the spectrum we go people look after less numbers of relationships so you get more of a bespoke service the larger you are.

416. The area that we have identified so far in the evidence we have had given to us is actually at the smaller end rather than the larger end.

(Mr Riding) Yes.

417. Clearly if you are dealing with large corporations they are sophisticated, in many ways as sophisticated as you are. It is at the SME level that problems begin to arise. Take a third variant of what we have just described to you, someone who has been for a long time a customer of yours, a personal customer or indeed has worked for another company and is now planning to set a business up of his own.

(Mr Riding) Yes.

418. On a number of occasions we have had people who have put very good ideas, very good products that they want to develop and they have said to us they have found it virtually impossible in the UK to raise the money they need if it relates to technological innovation. We have had people who have had to go to Scandinavia for their money, we have had people who have had to go to America for their money. What seems to us rather odd is that they have been able to raise the money abroad and they have not been able to raise it in the UK. Clearly the clearing banks must be the focal point at which this kind of business operation approaches the financial sector in the UK, so what has gone wrong in the chemistry of it?

(Mr Riding) I find it very difficult to give you a specific answer to that. I do not personally know of a case where people have had to go overseas. All I can say is I know it is difficult to finance start up situations but it is certainly by no means impossible provided all the normal business ingredients that we would look for in financing anybody are present. There would have to be some equity on the part of the people who are actually starting the company and if we were going to lend, we would tend to look for some form of security in that situation.

Chairman

419. Could I ask: do you allow your individual branch managers to take that kind of a decision for a small or medium enterprise and are they given the flexibility because of their judgment of the client, so to speak, and the acceptability of the case as far as the local manager is concerned or do they have to refer up and is it measured against a central standard?

(Mr Riding) No, we have delegated lending limits going right down to the branch manager level or to the account manager level in my part of the business.

420. That is the total sum but in order to lend to, let us say, a fairly new developing company, would there be risk attached?

(Mr Riding) We would not differentiate between a new company and an established company, no.

Sir Gerard Vaughan

421. Chairman, can I just follow that: we have heard that it is very difficult for customers sometimes to get to the person who actually makes the decision. He goes to his local bank manager, he is perhaps put on to a business manager, he then discovers that the decision made is coming from somebody higher up who he cannot actually contact, as it were. Is that a fair comment?

(Mr Riding) I cannot comment about the banks in general on that, I am afraid, because I do not know what sort of structures the other banks operate on. In our case I can say definitively that that is not the case, the decisions at small and medium sized business level are substantially made by the managers at the front end.

Cheryl Gillan

422. Can I just ask you a question before I get on to my main point which is on a different area connected with that. You said earlier on, Mr Harrison, that you did not really have scientists and engineers that were trained in banking skills. I just wondered if one of the problems when small and medium sized businesses come to you seeking support is that you do not actually have the

[**Cheryl Gillan** *Contd*]

personnel who understand the business those businesses are in and whether that is not a lacuna in your skill base, if you like?

(Mr Harrison) What I think I said was that we have bankers and that is the business we are in and what we are analysing is whether lent money will be used productively and repaid. You do not have to be a chemical engineer to work that out or at least so it has proved over the years. Of course you can be a banker, you may have noticed, who gets it wrong. So even being a trained banker is no guarantee but it is a good start, take my word for it. There is no evidence that we have ever found that putting lending decisions in the hands of specialist technical people would be a better way of doing it because they are not looking at what we are looking at which is cash.

423. The point I was making was perhaps if there is a greater depth of understanding, if you segment your managers so your banking managers have a deeper understanding of businesses they are dealing with, then there may be a possibility you would minimise some of your risk and perhaps provide some of the financial support necessary which we have found has gone elsewhere and out of this country.

(Mr Harrison) I first must insist that we separate equity and lending. What you say has happened is that people have gone abroad for equity. It is something that neither I nor Michael Riding know about, I have not heard about it. One of the reasons may be cultural, it may be that there are people in the economies or countries who have provided the money who are living in a country where risk reward is different to the United Kingdom, the tax base may be different. There may be all sorts of reasons but I have no information about it. The business we are in, in this field, is actually not exclusively lending but I judge that what we are talking about today is lending, it is not investing, it is looking at cash.

Mr Batiste

424. We were in Germany and we met a number of bankers, and we discovered that many people who I think you would define as bankers with primary banking skills actually come into banking with a background in engineering at university, to a far higher degree than we have in the UK. Do you think the situation in the UK would be improved in relation to your business if you had more first line bankers with an engineering and science background rather than an arts background?

(Mr Harrison) Again it is opinion—we can perhaps both give views on it—and I am always surprised to find the disciplines of the graduates that join Lloyds Bank are very widespread indeed and by no means concentrated on arts. We have chemistry degrees and physics degrees, plenty of those. The criticism is more frequently made that they have been lost to the industries that would want them rather than their being in short supply to finance.

Mr Batiste: Would it be possible to get what proportion of your graduate entrant in your bank is science based in their education?[1]

Cheryl Gillan

425. And engineering. Really I think Dr Summers this is your area and I am interested in your client contact because in your memorandum you were talking about the success of your management Buy-In and non-executive director programme particularly, and I think you pointed out the differences between yourself and Lloyds Bank in the earlier part of this evidence session. I want to know what is the level of engagement with companies that you support and if you do routinely seek to nominate directors of those companies?

(Dr Summers) Yes, I think I would respond slightly differently in that what we are always focusing on is what I call the 3Ms—management, market and the right amount of money in the company. We can obviously supply the money directly, that is a simple direct involvement. We are not running industrial subsidiaries so when we see the management going through different phases—and if you take the technology start up—you start with an engineer or a scientist, the bad news for him is the first thing he has to do is get a customer, that makes it into a business, he has to get sales. The next thing he has got to do when it gets bigger is he has actually got to run a management team. They are different skills you have to keep adding in and that is what we watch all the time. There is a conflict if you are an investor and on the board of a company, our own staff could not do that. So we have always tried to have a variety of people we know who can be non executive directors. We have got one sitting there, I think. These people have skills in their industry, they can give wise advice and they do a jolly good job for us. Last year we appointed 106.

Chairman

426. Can I just ask you: there is a number of venture capitalist companies who do not operate like that. There are those who do take board decisions or whatever as a matter of planning. You have clearly taken the decision not to go down that road?

(Dr Summers) Yes.

427. Now what is the reason for that?

(Dr Summers) The conflict that is faced if you are both investor and on the board of that company.

428. Right.

(Mr Kirkpatrick) If I can come in and maybe elaborate on that answer a bit. We are normally saying if we need to put a non executive director on that we have perceived (and the company has agreed) that there is a particular gap in their skills. It could be that the FD is relatively inexperienced so you need somebody from that discipline on the board. It could be that they are trying to expand

[1]See page 115.

[**Chairman** *Contd*]

overseas and need somebody with that sort of experience. So we are very much trying to tailor and change people to cope with the different phases in the companies growth.

Cheryl Gillan

429. You really are trying to match the needs of the company or client?

(Mr Kirkpatrick) Certainly it is the company that has to agree with the appointment. It must be useful to them.

430. Absolutely. Is it possible to provide the Committee with a breakdown say of the categories of the type of skills base of people who have become non executive directors in a group of companies over the last 12 months. I would be very interested in that. There is some opinion that in these cases it is always an accountant that is appointed to the board.[1]

(Dr Summers) I can assure you that is not the case.

Cheryl Gillan: I am very pleased to hear it.

Mrs Campbell

431. I want to, first of all, clarify some of the differences between venture capital and development capital. Mr Harrison's remarks were very helpful in that respect. Can I clarify, first of all, is it true that venture capital, start up capital, is a higher risk than development capital, can I clarify that?

(Mr Riding) Yes.

432. It is?

(Mr Riding) I believe so.

433. One of the problems we have heard about is that there is still a huge gap for firms who wish to acquire development capital. I know it is certainly true in my constituency in Cambridge, where I have a very large number of very small high tech firms, the real problem comes not in start up but in the second stage, it is very often the second and third generation products coming on line before they have managed to make very much money from their first generation. They have great difficulty in attracting capital into that second and third generation. Now if this is lower risk than the start up capital, is this not something which the banks could be playing a much larger role in than they are at present? I realise now that 3i is making that one of their main areas of development, but really the question is directed at Lloyds, Mr Harrison perhaps, is this an area that you intend to expand and if not, why not?

(Mr Harrison) I do not know, without looking at the specific instance, the precise situation of any one of the companies to which you refer but it sounds to me as if the case, although not a start up, is effectively—and you will think it quibbling with semantics—further venture capital, in that if the second product requires launching before the first product is generating cash, the judgment that the investor has to make is not really dissimilar to that made by the initial investor. What he is not looking at is a profit making company with an established distribution and sales background, where there is evidence that the cash flow will be adequate, the products are selling and where the management, therefore, is to an extent proven and where there is reason to suppose that the second product will be as likely to succeed. If that is the case, then I believe, in my terminology, you would call that development capital and it would be relatively easier to come by. If in fact there is no track record, I really believe you are looking at the same thing as you were the first time and the same kind of risk reward equation will apply.

434. That is very helpful because that has clarified in my mind the difference between venture and development capital.

(Dr Summers) Could I add a caution because the picture you are painting is having survived for so long then the investment is safer. There is another picture that if you have actually gone this long and not managed to plan what you were doing and you have run out of money then you probably have not planned your venture very well. It is actually very difficult at that phase, two years in, when the sales have not come through and the original plan is not being met and you have to regenerate confidence in your backers or find other backers. You have the two extremes. On pricing the terms you have the people who have worked there solidly for two years believing they are just about there and it is just about to work and you have the other side saying: "Well, I am not sure". The pricing problem is very great. There is equity money available but they are being asked to reduce their equity holding at a time when they think they are just about there.

Chairman

435. Do you recognise that as a problem that 3i would be expected to solve?

(Dr Summers) Yes, I think I can quote Domino, which is a Cambridge based company, and if you look in your figures you will find that a quarter of a million went in there when they had got no sales.

Mrs Campbell

436. Can I quote to you a point made by Sir Robin Nicholson, the Chairman of ACOST because he said there is often a need to "... finance substantial growth in sales and a lot of working capital is required." This is beyond the first stage, it is while products take off and there is a need to finance substantial growth. He identified for us that there is a real need for finance in that second stage of growth. Some of my small firms in Cambridge may be in the situation you are describing but there is perhaps a more general problem as well. I wonder if you see this development capital as being a growth area and one that as a bank you would feel more inclined to invest more in in the future than perhaps in the past?

[1]See page 115.

[**Mrs Campbell** *Contd*]

(Mr Riding) We have a development capital subsidiary as we mentioned earlier.

437. Indeed.

(Mr Riding) We intend to continue to have a development capital subsidiary. I think I have to add that as far as my view of that business is concerned that commercial viability is an absolute essential before we are willing to invest through our development capital subsidiary. So if that is a helpful definition of where we stand in that perhaps I could just add that to the party. Going to the more general question of where you can get development financing from using a small "d" as opposed to a capital "D", there is a vast array of financial services available in the market place in this country to small and medium sized companies who are developing providing they are soundly managed, reasonably well capitalised and reasonably well managed. I think you can take, for example, the factoring industry, which for a company which has got high quality customers and a growing order book is an absolutely ideal method of financing a growing business and takes away, I might add, a lot of the administrative burden and a lot of risk from the company as well, so very much to be recommended. There is a whole series of hire purchase and leasing companies around the country, as well as the banks, who are willing to finance investments into plant and equipment and into premises and so on. I do not think there is any shortage of money, in fact I would say it is a very competitive area of the market, in fact, provided you are talking about a viable business.

Sir Trevor Skeet

438. You go in for the low risk investment—and I can understand this—but the banks have made an enormous loss over the years and you say you have set up Lloyds Development Capital, how successful has that been? Have you experienced large losses here which you have had to write off?

(Mr Harrison) There are two or three bits to your question. You say I mentioned going in for low risk investment, we do not actually go in for investment, we go in for lending as a bank.

439. Yes.

(Mr Harrison) Whenever you lend you do so on the assumption that it will be repaid, so in those terms it is low risk, you expect it all back. That we have lost money is patent; it is part of the problem of being a bank that sometimes you get it wrong and in a recession you get it badly wrong.

440. Of course.

(Mr Harrison) I think that is a separate question, if I may put it, to the question of this development capital company. I regret, in a sense, that this company has taken quite such a prominent role in our discussions. It is a subsidiary of Lloyds Bank, it exists and as Michael Riding has pointed out we plan to maintain it but it does not loom large in the day to day business of Lloyds Bank. Yes, you will see, I think, we even publish the provisions that were made in the 1992 balance sheet which is there. We were obliged to make substantial provisions against its portfolio in the 1992 books. A re-valuation of those investments showed that certainly in the last three years, the recessionary years, a development capital company comes under extreme pressure. So, has it been a tremendous profit earner for Lloyds Bank? I think overall the answer to that is no. In its early years it had a number of considerable successes starting in the early 1980s and in the 1980s there were some tremendous successes but it is a very cyclical affair. I would not wish it to be viewed as the centrepiece of Lloyds Bank, it is not.

441. I wonder whether I can have your ideas on something which appeared in the Financial Times this morning. They talked about a European Investment Fund being set up by the European banks, the European Commission and the European Investment Bank and this would be initially to provide loan guarantees, both to European small and medium sized enterprises and also extend this to include equity finance. Do you think this is possibly one of the ways forward to fill the gap between, let us say, the technological company that must have finance, whether it is for start up or otherwise, and the other enterprises that have to be got going in order to buoy up the economy?

(Mr Harrison) I read the article and the Bank is aware of the fund and like a lot of other banks throughout Europe has been approached by the European Investment Bank. The prospectus for the fund explains that it seeks not to be competitive with the market. It is an interesting point made by Brian Unwin in the article...

442. That is right.

(Mr Harrison) That he is determined that the fund shall be run on market lines.

443. I confirm.

(Mr Harrison) By that, he defines that as being a respectable return on capital employed. But, in the prospectus he makes it clear that neither in the guarantees of lending nor in the equity investments that may or may not follow is the fund intended to be a substitute for market sources of capital or lending. In fact, it is aimed at meeting the gaps in the market and particularly on a country by country basis so that those countries where finance for small and medium sized enterprises or capital for SMEs, where the market for that is less developed, will be the focus for the European Investment Fund and not a substitute for that kind of money in countries where it is a great deal more developed.

444. What you are saying Mr Harrison is this: it could be complementary to the work which you are already doing and this would be more advantageous on the Continent than in the United Kingdom?

(Mr Harrison) Not only on the continent but towards the southern end of the continent.

445. Thank you.

[Sir Trevor Skeet *Contd]*

(Mr Harrison) And complementary is exactly what we have described it as in the letter we have written. We see it as a complementary source of funding but note that it is two-thirds controlled and owned by the EIB and the Commission. I am sure it is 40 per cent EIB, 30 per cent Commission and 30 per cent banks. The decision taking body will be a three person body. I think perhaps you have a picture of the sort of decisions which it will take.

Chairman

446. It would be consistent with EIB's remit that it should be concentrated in the development area?
(Mr Harrison) I think so.

Mr Powell

447. Does Lloyds Bank intend to participate in those funds?
(Mr Harrison) I hesitate to reply in case the answer is confidential. I appreciate you are entitled to know these things; if I discover it is not confidential we will let you know.[1]
Chairman: Very good.
Mr Powell: Can I move on. You will be aware of the ACOST Report, "The Enterprise Challenge: Overcoming Barriers to the Growth of Small Firms" which identified and emphasised the lack of corporate venture. One of their main recommendations was: "that DTI investigates ways in which corporate venturing activity may be stimulated in the UK, both directly and through linkages with the institutional venture capital industry." I am wondering whether you have any thoughts for us so far as how this might be done?

Chairman

448. Shall we try 3i first on that?
(Dr Summers) We do see evidence there. There were two Japanese company investors in the examples we sent in. The other area is we see technology springing out of these large companies and very often they will take a shareholding in that business. All of the efforts we have made to generate spin-offs in the UK have not produced the volume of interest that we had hoped but I can give you no explanation why.

449. You would be pretty sceptical of a scheme of this kind?
(Dr Summers) Yes.

Mr Powell

450. Does Mr Riding have any further observations on that?
(Mr Riding) The only observation I can make, which may be helpful, is that I, as some Members of the Committee know, spent some time in Japan in my career. I believe that corporate venturing as described here is as close as I could get to describing how the Japanese groups have operated for a long time over the years, in other words spinning off small companies and backing them by very large companies, providing them with distribution networks, providing them with management expertise, providing them with long-term funding and so on and so forth. I think actually in the Japanese economy you have actually seen a lot of corporate venturing or that sort of activity. I am not aware of it being an activity which is a large part of the scene here.
Chairman: It certainly has not been.

Sir Gerard Vaughan

451. There is a view in this country that we have lost out because we follow too often a linear development in our research. We go from research to companies, to financing and so on. In Japan and in Germany they bring in the financial people, if I can call it that, right at the beginning. The DTI at the moment are holding, or have been holding, a series of regional meetings with local researchers, academia and industrialists. I notice that the banks, the financial advisers, are not involved in these meetings at all, as far as I know, and certainly local bank managers, regional managers I have asked know nothing about these meetings. One of the things that has been put quite strongly to us is that both in Germany and in Japan they bring in the financial advice right at the beginning. Do you think that is something that is happening or ought to be happening or would be helpful if it happened in this country?
(Mr Harrison) Well, I think the answer would tend to be repetitive, that is the problem on the face of it. We have discussed sources of equity and we have discussed sources of loan capital and Michael Riding has mentioned leasing, factoring, a whole range of other ways of raising money. If you start from an industry or an economy where banks habitually take equity investments on their own books it could be that a bank, as an early participant in a scheme such as you suggest, would be an important, even an essential, member. We do not have that structure.

452. I know we do not.
(Mr Harrison) There is certainly no prospect that we are about to have such a structure and we do have substitutes for that structure. We do have sources of equity capital that have already been discussed. I think my answer is that it would be horses for courses. There will be places where it would be useful to have a word from the bank at any early stage and other cases where it might not be so important. I certainly do not think I would see it as critical.

Chairman

453. Could I ask if 3i have a view on that?
(Dr Summers) Chairman, could I comment on that? You will see that we have tried on several occasions to bridge this gap between the scientist and the financier and we have been curious and

[1]See page 115.

[**Chairman** *Contd*]
determined to see if we can get it to work better. In the evidence that we sent you there was Research Exploitation Ltd that actually tried to interface with universities and we have continued that. We also set up an experiment on the Cambridge Science Park where we actually integrated our invewstment office in a building with start-up companies. It is successful to a degree but what you bump into is the educational differences. If we could start this process even earlier so that the scientists understood a slightly wider commercial remit and also so that commercial people understood more of science, way back at school time, then I think that is where you start to get better responses.

(Mr Kirkpatrick) Maybe I could just explain that because we have got our regional offices spread all around the country and because those executives are close to our investments and they regularly visit, we would expect—because we tend to say to ourselves that we are partners with our investee companies—that we would be part and parcel of those very discussions that you were mentioning.

Sir Gerard Vaughan

454. But you are not.

(Mr Kirkpatrick) We are because we regularly visit those companies and if we did not know what was going on we would certainly be very worried. Certainly if I went to a company and found out that one member of the management team had a super idea but he had not told his finance director or his works manager or his export director, he would rapidly realise that he was out on a limb. I think the important thing to remember is that most of these companies are actually looking long term and we are looking long term. Many companies are not actually looking 10 years plus at the moment and that is a problem.

455. I understand that both in Germany and in Japan they bring in the financial advisers very early on. The DTI are endeavouring to bring together industrialists, technology engineers and academics in order to try and have a planned strategy from the beginning.

(Mr Kirkpatrick) Yes.

456. Why are we not doing what they are doing in Germany and Japan by having the financial input at the beginning?

(Mr Kirkpatrick) I ought to say that actually we are. In our submission we did say that virtually over half of the money that we put out every year goes into our existing portfolio companies.

Sir Gerard Vaughan: Are the banks part of these regional meetings with the DTI?

Chairman

457. It may be that has not come across.

(Mr Riding) I do not know.

Sir Gerard Vaughan

458. The answer is no.

(Mr Riding) I do not know.

(Dr Summers) We have a member of 3i's staff on secondment to the DTI who I think is involved in trying to organise this.

Mr Batiste

459. I have a question really in two parts, one to each of you. If I could start perhaps with 3i. In your evidence you suggested, as I read it, that "for five years...."—we were talking here about Technical Development Capital—"..... the TDC Innovator of the Year Award attracted over 100 entries each year. Of the five winners four failed, and one, Domino, went on to become a quoted company." Coming on to the passage on the Cambridge Science Park it says—talking about how the venture was set up, and we have visited St John's Park already, you talk about partnership and the support for setting it up—"Despite this over 60 per cent of the new companies we then financed failed." What we are really trying to come to terms with and to understand is what is the mechanism that causes so many of these companies to fail? I accept you may well say that the United States' failure rate is a lot higher because perhaps the selection procedure is not as stringent, people are more prepared to take a punt and the price of value is not regarded as high. In our system you are obviously very professional, you have been running for an enormously long time, and if out of your technology awards four out of five failed and 60 per cent of the companies you selected on the park failed, I am interested in your perception as to why that proportion is so high? Is it because the technology peters out after a promising start or is it because the skills that have been needed to make those companies successful in one way or another are not provided?

(Dr Summers) On the start-up race you would expect to see failures. We would be doing an amazingly good job if only a third failed. So it is why does it go higher than that and it is for every reason under the sun. It is actually not very often that the technology fails.

460. It is not?

(Dr Summers) It is not. The technology usually comes around again, it goes off in a different form and finds a different target market place. I think we are quite good at eliminating technology ideas without a market. What does happen is that there are competition fears, there is management who cannot make the transitions, cannot grow with those businesses and they just come to an end.

461. I can see that many of those factors would operate and that is an extremely helpful answer. To what extent though do you feel that from the available institutions, banks or yourself—and this is really why I throw it open to both of you—a greater hands on support in the provision of financial skills, business skills, would improve the success rates?

(Dr Summers) Can I say that our experience of hands on management is that it does not reduce that

[**Mr Batiste** *Contd*]

failure rate. What is more important is to get the right skills there. You may say that that shows we do not have the industrial skills but there is a variety of skills needed at different times and hands on management from a banking institution or even a development capital institution has not, in our experience, improved the actual survival of those companies.

462. I wonder if that would be the impression of Lloyds Bank as well?

(Mr Riding) I would agree with that entirely. There are particular difficulties with hands on management, corporate law and shadow directorship issues which are clearly important. It comes down in the end to a matter of whether or not you get a better result by having hands on management and I do not think there is anything to prove that that is the case.

463. The impression you are giving, and the thing that is often said to us, is that these fledgling entrepreneurs in the technology field sometimes felt that they lacked financial skills to project their business forward in a sensible business plan, properly costed. The impression I get from both of you is that that is not a problem, by the time they are actually getting that investment that sort of exercise has already been done and you are putting in place the safeguards you require to ensure that they keep to that. Would that be fair?

(Mr Riding) Yes.

(Mr Kirkpatrick) Certainly we would not back a start-up unless there was a reasonably complete management team in there that we would say was able to take the company forward as far as we could see and as far as I could see. You asked the reason why companies fail, virtually every reason under the sun from factories burning down to the cat getting run over, everything happens. Unfortunately, most of the time it is beyond our control what we perceive is going to happen and what they perceive is going to happen. If I could give you an example: we would normally say the start-up company, if they do not rewrite their business plan maybe three times in the first nine months it is unusual.

Chairman

464. If you had to identify a single cause it would be management, either lack of or deficiency in some way or other or inexperience?

(Mr Kirkpatrick) My colleague mentioned at the beginning the three keys to us are: first of all, a good management team; secondly, identifying the market correctly and the third one is adequate funding to actually take the business beyond even the first stage to the second and third stage.

Chairman: How do you create a good management team?

Mrs Campbell

465. I wonder to what extent you feel that better training is the answer and if it would improve the success rate? Certainly we were under the impression when we visited German firms that they had much higher technical qualifications and certainly many of their managers had second degrees in business and commerce which is not common in this country. Do you think that is the answer?

(Dr Summers) Better training would be very helpful but start-ups are stressful things and you have to have a leader and that is another area that is very important. I will never back a start-up with the perfect management team of equal parts between finance, marketing and manufacturing because they will all fall out. You have to have leadership.

Mr Batiste

466. On your analysis, which really goes to the heart of what we are looking at, forgive me if I push a little more in one direction. We have been talking of a failure rate that related essentially to technology start-ups because we raised the question in the context of your technology development capital subsidiary. Would the same pattern of failure rate, the same extent of the failure rate, apply to start-ups in what one might call the non-technology based areas because people have told us that it is more difficult to raise capital for technology start-up? We have also had quite a bit of evidence that in fact the failure rate in something like the Science Park at Cambridge is lower than it would be in ordinary start-ups elsewhere. We have not really got anything to grasp on this. We have had ideas given to us and statements made but we would be very interested in your impression.

(Mr Kirkpatrick) In a high technology start-up one of the main advantages they have got hopefully is a new market which is expanding pretty rapidly and maybe not many competitors. The disadvantage that some other start-ups have going into mature markets, which are maybe dominated by several major players which can by pricing make life very difficult for somebody starting up, sometimes you can say that start-up in a traditional sector is actually more risky than start-up in a high tech sector.

467. Is that reflected in the respective levels of failure of start-up?

(Mr Kirkpatrick) Certainly we view any start-up as start-up, whether it be manufacturing something to do with electronics. A recent example is a company that was recently sold off, the Phileas Fogg crisp company, the Derwent Valley Food Company. We classified that as a start-up when we handled that in the early 1980s but that to us was a highly risky start-up because it was a new product idea, it was a particular type of potato crisp, nothing to do with electronics which people would normally see as high tech but to us it was high tech and it was a risky start-up in a mature market.

468. You would not regard a high tech start-up in terms of your company as being inherently more risky than a more conventional start-up in an established market?

(Mr Kirkpatrick) Any start-up is risky.

[**Mr Batiste** *Contd*]

Chairman: I think that is the point, any start-up is risky for whatever product or whatever service in a competitive market.

Dr Bray

469. In 3i's memorandum you said—this is on 3i's Venture experience— "In the UK we never saw the volume of marketable product ideas which flowed freely into our offices in the States." Did you also find there was a higher rate of failure in the States?

(Dr Summers) I wrote that sentence from the experience that I had in the States. You can sit in your office and people come and present on videos their new business ideas, their business plans, and they are far more professional, they do not mind having a go and failing. I cannot give you figures, I am afraid. There is a far freer willingness to have a go and maybe fail.

470. Is your feel of that situation that the failure rate is at least as high in the States?

(Dr Summers) I would suspect it is higher. I do not know, I am afraid.

Chairman: More players, more failures.

Dr Bray

471. The fact that a person has failed once does not count against him?

(Dr Summers) It does not count against him at all, it is all part of their experience.

Cheryl Gillan

472. When you were talking about weaknesses in management and the reasons for failure, I just wondered would you pick out something such as marketing as being a particular area of weakness in British industry?

(Mr Kirkpatrick) Frankly I do not think I could because I think it varies so much. You will get one company that has got very good marketing and financial skills but falls down on the factory management skills, for example, and in some other companies it would be other way around. Of the ones we see I do not think actually I could give you an answer on that one. Normally we will find by pushing a management team the actual underlying skills are there and the knowledge is there, it is just getting them to broaden out a bit more and to say to themselves: "We really have to think 10 years ahead, we have to think what is happening in Germany or France or the States or Korea, we have to think and understand these things". A lot of people make derogatory comments about British management but we have got examples of some superb management teams that are beating the world without any problem at all.

473. Of the ones that have failed have you done any analysis of those and identified, say, the top three areas of weakness in those businesses?

(Mr Kirkpatrick) Yes, we have.

474. If you did have that sort of analysis it would not be something I would expect you to know off the top of your head but if it could be made available to the Committee.

(Mr Kirkpatrick) It goes under the category of management.

475. No finer detail than that?

(Mr Kirkpatrick) No.

Mr Powell

476. I want to return to this question of international comparisons in case there are some further lessons that we can learn from what is happening in our main competitors, particularly the experience of Japan and Germany. Am I not right in thinking in both those two countries there is lot of cross shareholdings between the bank and financial institutions on the one hand and industry on the other, whereas that is a very rare and not particularly welcome part of the British system. Can you perhaps give me some further insights into how you view the German and the Japanese systems, are there lessons which we can not only learn but also apply in this country from their experiences in your view?

(Mr Harrison) Certainly Michael Riding will be the person to talk about Japan. The only comment I think I would make is that Germany may be overstated. Germany is often quoted as an example of these cross shareholdings. Two points: one is that the origin of many of those shareholdings is as unintended as some of the shareholdings that we have acquired in the last three or four years. It was not in fact a conscious structuring of the economy such that the banks would have shareholdings in major industries but, in fact, problems arose and thereby they were acquired. The actual voluntary investment of bank capital as distinct from development capital subsidiaries but actual bank holdings of equities is a relatively modest figure of less than one per cent of bank capital invested in manufacturing industry. We are not looking at a purposeful and growing and dynamic environment where banks invest in their customers, that is not the situation in Germany but there is a substantial historical holding by major banks in some major industries.

Chairman

477. It may be only one per cent but the connection between the bank and the company seems a lot more formal, a lot more committed, as it were, as a result of that structure.

(Mr Harrison) I would not like to claim to be an expert, we have one or two but I am not one. The house bank concept is I think more spoken of, I agree, in Germany. The lead clearing bank in the United Kingdom has often, and should have, a very close relationship with the customers. I do not believe there is any particular evidence that theirs works better than ours from that point of view, but remember we are talking about commercial banking, we are not talking about investment.

[**Chairman** *Contd*]

(Mr Riding) It is very difficult to draw any specific lessons from the Japanese experience over the last 30/40 years that you could immediately translate into a series of recommendations as to what we might do here. The history of the Japanese industrial banking and financial institution groups goes back a very long way, and even though the Zaibatsu were broken up after the Second World War the groups that have formed subsequently primarily around the banks have in some senses—I emphasise in some senses—replaced what they were. They are, of course, informal groups these days as opposed to the formal but that informality includes cross shareholdings all over the place linking industrial companies, banking institutions, trading companies and other forms of financial institutions such as insurance companies and so forth. That is a structure that has been in place really since the early 1950s in its present form. It would be very difficult to envisage the UK economy could in any way be moved into a framework of that sort.

Mr Powell

478. Have you any observations on that, Dr Summers?

(Dr Summers) Very few. Our subsidiary in Germany finds that the balance sheets of the companies that we are investing in have far more debt than they do in the UK and as an equity funder we were surprised by that. They can take that extra debt on because of stable and low interest rates.

Chairman

479. You have some six offices in parts of Europe?

(Dr Summers) Yes.

480. Is that broad experience shared within the Community?

(Dr Summers) No, they vary tremendously by country.

481. Is the pattern similar?

(Dr Summers) Italy and Spain, we have only been there for a couple of years so I cannot paint the picture there. France has an equity pricing structure that is starting to develop now and looks quite attractive.

482. If we could come on to the small and medium enterprises. Why do you think the small and medium enterprise sector in the UK appears underdeveloped in comparison with our competitors?

(Dr Summers) I think you have to go back to the condition of the 1960s where the UK manufacturing structure was more in larger companies and where, again, the educational push was towards finding secure jobs in large companies. I can find no other explanation.

483. Any other comment from Mr Riding?

(Mr Riding) I am not sure that I would entirely accept that it is underfunded.

Chairman: Not so much underfunded as underdeveloped. It is obviously a very large sector but it seems not to have a great organised growth attached to it.

Sir Trevor Skeet

484. Surely, Dr Summers, you say in your own paper in the memorandum: "International comparisons show SME's account for 32 per cent of non-primary private sector GDP in the UK compared to a figure approaching 50 per cent in the United States and Germany and 60 per cent in Japan." Surely this must indicate a trend? Surely you must have some explanation for this?

(Dr Summers) That was an observation that I made, I am not sure I can explain the trend or why that was.

Mrs Campbell

485. I wanted to ask again, coming back to high tech companies, how closely do you examine the technological expertise of the key personnel? I am thinking of, again, another firm in my constituency which manufactures medical equipment spun off from university research. Would you be more likely to back that firm if the founder of the company or another key member of staff had been engaged in that research? Would that be an important factor?

(Mr Kirkpatrick) Yes, it would. If the management team that was approaching us had not the technology that they were hoping to sell in their own team we would say: "Who has got it and who are you bringing in?" Yes, it would be very important and it would be very important for us to judge their technical competence in that field. Certainly sometimes in the very high tech-ish small, very small, industry developing areas it is very difficult because it is growing so fast which means you can think you are at the forefront in Cambridge but in fact somebody has beaten you to it in Massachusetts or somewhere.

(Mr Riding) We do not have the expertise to assess technical competence in that sense and we must not pretend that we do. We would not take that factor into account specifically. We would take into account the normal banking criteria we always do.

486. Could I come back to Mr Kirkpatrick and just ask how do you assess that expertise? You said that you do take it into account. Do you have sufficient technological expertise amongst your own staff to be able to judge people whose work you are trying to assess?

(Mr Kirkpatrick) I would have to admit the organisation reports to me so I would have to say yes. We have got a range of skills and background. My colleagues come from different industry sectors and they have got different qualifications. They have got qualifications ranging from electronic engineers to, in fact we have got a vet, and we do a lot on the medical side. We do have that expertise. I have to stress it is not just judging the technical expertise, all these men have typically been managing directors so they know what

[**Mrs Campbell** *Contd*]

it is like to run businesses themselves. They know how lonely it can be and they know what to look for. It is not just the technical bits.

Chairman

487. It seems that more and more you come to rely perhaps on the jizz of the people running the company in question because either they react or you react with them. Is that right?

(Mr Kirkpatrick) Not entirely, Chairman. A lot of the judgment is objective on what they have done and what they say and the way they produce their business plan, so you must go along not only on the

488. On the skill.

(Mr Kirkpatrick) On the other hand you have to be subjective because actually one of the hardest things to do is to say how does this new management team you have never met before, how do they gel together and are they survivors and, as my colleague said, is there one true leader there. It is really judging that. I have to say it is difficult and we do not always get it right. I think we get it right more often than not otherwise I would not be here. Frankly, it is very difficult.

(Dr Summers) We also always take two views on these investments, we take both the view from our financial investment staff and from our industry staff. There have been instances where we have invested against the advice of our industrial staff and where we have not invested. We do take other views.

489. You are still both there.

(Dr Summers) Just about!

Mr Batiste

490. One of the supposedly great strengths of the UK situation is the developed stock market that is available for providing capital. I suppose both of you operate in a variety of different contexts: 3i is looking for an exit from companies, although you have not got a fixed time for seeking your exit, and I think Lloyds in a similar respect in raising capital for companies but also Lloyds, I think, has substantial fund under-management so you actually approach this aspect from both directions. The point I am really trying to get at is this: do you think that the market is an effective allocator of resources and more specifically does it actually value the technology based industry adequately, does it put a proper value on research and development? We have heard from a lot of companies that it is very difficult to get the recognition of the value of the research and development on the stock market, possibly because those involved in making the decisions about allocation do not have the sufficient technology background to be able to assess it. What would be your view?

(Mr Riding) I do not think I can express an opinion on that. I am not sufficient an expert in the way the analysts look at this.

(Dr Summers) We do not say that they do not overvalue at times and we are surprised sometimes by the value they put on technology companies and you may say that is because of misunderstandings as well. We find it a very volatile area We find it very difficult to predict how the technology that we are sponsoring is going to be received in the marketplace. The recent example of Tadpole was a pleasant surprise to all of us.

Chairman

491. We had a witness who said it was a great pity that the Stock Exchange, right at the bottom of the market, decided to abolish the USM. Would you agree with that? Is that something that is missed when seeking to float without going through the front door, as it were?

(Dr Summers) Yes, Chairman, it is missed. I think the greater disappointment was the lack of investor interest in investing in companies on the USM and that is really why it started to go away because there were not the individuals or the institutions to buy the shares in that market.

Sir Gerard Vaughan

492. You have both been through a very difficult period with the recession. We wanted to ask you what sorts of rates of return you were looking for. We have been getting some information from American companies. It may be that this is not something to discuss at the moment, I do not know. I do not want to embark on a very complicated discussion right at the end.

(Mr Harrison) We can talk about the rate of return. Remember, we work for a bank.

493. Yes.

(Mr Harrison) Therefore, we are interested in whether our shareholders get a respectable rate of return. We have a view, it is an inexact science, as to what is the cost of capital at Lloyds Bank, and we run business on the basis that every part of the business should justify its existence by making a contribution that is acceptable to the shareholders. In terms of the rate of return, that is what drives Lloyds Bank, it is the way that we run the business. Each piece of the business will, as a result of that, have a different formula as to how to get there. There is a clear risk reward paradigm to be established for each piece of business and this will drive the margins that are charged, or the charges that are levied, in order to achieve that return. Whether that gives you the answer you are looking for I do not know but that is how we run the business.

(Dr Summers) In recent accounts our 10 year rate of return was 16.6 per cent and our five years was 14.8 per cent.

494. That would be during a difficult period.

(Dr Summers) I think the fact that the 10 year is higher than the five year suggests it is coming down.

Chairman: Gentlemen, thank you very much indeed, you have been very patient with our questions. 3i, Mr Kirkpatrick and Dr Summers, thank you very much. Lloyds Bank, Mr Harrison and Mr Riding, thank you very much indeed.

Letter to the Clerk of the Committee from Dr Richard Summers, Dirctor, 3i Group plc (25 June 1993)

This is a short note to provide you with the further information that the Committee requested on Wednesday night.

We have analysed the 96 Non-Executive Director appointments made in 1992 centrally from London, and found the following:

- They were obtained by 72 people.
- Only 32 per cent of whom were Chartered Accountants.
- Only six of the Chartered Accountants were "professional service", the balance were all people who had picked up the qualification then gone into industry.
- These 66 people had a combined 1,950 years of industrial experience (29 years on average).
- There were 14 professional engineers with obviously many more who had experience in the engineering sector.
- Twenty of the people had technology experience.

Although we could extend this analysis for all the appointments we have made I do not think you would find that there is any change in the ratio of the qualifications. Perhaps you will let me know whether this is adequate, or whether you would like a very full analysis.

I did enjoy taking part in the debate and I look forward to seeing the committee's report.

Letter to the Clerk of the Committee from A L Richmond-Scott, Senior Manager, Public Affairs, Lloyds Bank plc (1 July 1993)

In the course of giving evidence to the Committee on 23 June my colleague Mr David Harrison undertook where possible to provide certain additional information. This included the proportion of the Bank's lending that was to manufacturing industry.

I am able to advise you that 15.3 per cent of the Bank's total advances to business in the UK at 31 May 1993 was to manufacturing industry.

Letter to the Clerk of the Committee from D H A Harrison, Senior General Manager, Lloyds Bank plc (9 July 1993)

Thank you for your letter dated 1 July in which you list the three points on which the Committee requested further information.

You will already have heard from my colleague Alex Richmond-Scott about the proportion of our lending which is made to manufacturing industry. Attached to this letter is a schedule setting out the distribution of our graduate recruits in the last three years between scientific and non-scientific disciplines. You will see that the proportion of scientific disciplines shows a gradual increase.

We have considered carefully the position as regards the invitation which we received to participate in the European Investment Fund. Our reply to that invitation has been sent to the European Investment Bank. The EIB has not published a list of banks who have agreed to participate in the Fund but we believe that it is their intention to do so in due course. In these circumstances, we think it would be discourteous to the EIB to pre-empt their publication by putting on the record Lloyds Bank's decision as to whether or not to participate. We hope that the Committee will understand our position and that they will be content to receive the answer to their enquiry when the EIB publishes their list of acceptances.

Lloyds Bank plc
Graduate entrants: University disciplines

Year		No. of people	Percentage
1990	Engineering	1	0.8
	Other Sciences	21	17.2
	The Arts	100	82.0
1991	Engineering	2	2.3
	Other Sciences	14	16.3
	The Arts	70	81.4
1992	Engineering	3	3.5
	Other Sciences	17	19.5
	The Arts	67	77.0

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