PREM 19/2116

MT

Confidential filing

New Blood for Research
Internation Techology

Alvey Report

EDUCATION

November 1982

Referred to	Date	Referred to	Date	Referred to	Date	Referred to	Date
(new covers) ~~5.7.85~~ ~~6.12.85~~ ~~6.5.87~~ 4.9.87.							

PREM 19/2116

TO BE RETAINED AS TOP ENCLOSURE

Cabinet / Cabinet Committee Documents

Reference	Date
E(83) 7	07.03.83
E(83) 2nd Meeting, Minute 1	10.03.83

The documents listed above, which were enclosed on this file, have been removed and destroyed. Such documents are the responsibility of the Cabinet Office. When released they are available in the appropriate **CAB** (CABINET OFFICE) CLASSES

Signed Wayland Date 24 September 2015

PREM Records Team

E.R.

CDP
7/9

PRIME MINISTER

LORD WEINSTOCK

Arnold Weinstock telephoned me this morning on two matters.

First, he hoped that you would not be moved by the chorus of laments from industry about the demise of little Neddies. They served no useful purpose at all. Nor did the large bureaucracy servicing them in the DTI. They should certainly be eliminated.

Secondly, he thought that you would welcome his views on ALVEY. He recalled that you had discussed ALVEY with him when it was first set up. He would not say that it had been a failure. But equally, he would not want to see it continue in its present form. Within GEC, he was terminating a lot of collaboration projects in ALVEY because he did not think they were going to yield any practical results. Industry continued to need help from the Government with the funding of research. But this should be on an ad hoc rather than a systematic basis. You should not feel tied to the existing structure. If ALVEY were to continue in some form, it would be important to get rid of the bureaucracy associated with it. There was a technological Mafia at work which had built up a strong interest in protecting itself. He added that ESPRIT offered a good deal better value than ALVEY.

C.D.P.

Very valuable. Would DTI like have a word - Alvey?

mb

C. D. POWELL
4 September 1987

CONFIDENTIAL file SRW

10 DOWNING STREET
LONDON SW1A 2AA

From the Private Secretary 6 May 1987

Dear Tim,

ALVEY AND EUREKA

The Prime Minister has seen your Secretary of State's minute of 29 April about the effectiveness of the Alvey and Eureka programmes, which she read without comment.

I am copying this letter to the Private Secretaries to members of E(A), Tony Galsworthy (Foreign and Commonwealth Office), Rob Smith (Department of Education and Science), John Howe (Ministry of Defence) and Trevor Woolley (Cabinet Office).

Yours,

David.

(DAVID NORGROVE)

Timothy Walker, Esq.,
Department of Trade and Industry.

CONFIDENTIAL

Prime Minister 2

DCS
5/5.

PRIME MINISTER 1 May 1987

ALVEY AND EUREKA

Government funds which go into these projects are straightforward grants which are written off by the Treasury. The funding is therefore very different from launch aid which, for a successful project, is subsequently repaid with a modest interest rate of return of around 7 per cent. The projects are therefore very different from true joint ventures when Government and industry would participate in the fruits of any success in proportion to their relative funding contributions. It is against this background that we have to examine what programmes like Alvey and Eureka are really seeking to achieve.

The evidence in the DTI minute is that projects supported under both programmes are highly market-orientated. It is welcome news that 90 of the Alvey projects have already identified an end product. This, of course, reinforces the argument that Government has already given the Alvey work a good start and now it must be taken forward by industry! Programmes which lead to early commercial application contrast markedly with basic long term research where leadership is a natural Government function. The logic of the DTI paper therefore supports a smaller Government role in any second Alvey programme, for which some £15m per annum has been earmarked after 1989. This is not because the investment was wasted or maladministered but because it has been successful in approaching the threshold of commercial exploitation.

The Eureka programme is younger and also working well. The catalytic role of Government in welding together participation from 19 countries is proving successful and there is no reason why it should not continue. It is quite appropriate for Government to help with marketing programmes

or EC bureaucracy. What is inappropriate is that Government should go on putting in £10m per annum of taxpayers money in developing home communications systems, high-definition televisions, or automatic design and production of silicon chips. These are the sorts of project which, once industry participants have been marshalled, should take off naturally because the private investor is going to make a lot of money.

Conclusion

The coordination efforts which the DTI is successfully deploying in programmes such as Alvey and Eureka should be applauded and supported. This does not mean that the taxpayer should have to continue 'investing' in such projects, particularly when the so-called investment is written straight off as a grant regardless of how successful the project becomes! A modest operating cost to the public purse for the catalytic role of Government is quite acceptable.

There is much evidence that British private sector industrial R&D falls short of the level in other developed economies. 44% of total UK R&D was funded by private industry in 1983 compared with 53% in the USA, 80% in Japan, 59% in Germany and 46% in France. I doubt whether we are going to increase Britain's figure by more programmes of the Alvey and Eureka type where Government spoonfeeds the private sector by spending taxpayers' money on what should to be commercially viable reseach investments. It is false logic to assume that industry's contribution is going to be increased by feather-bedding such projects up to and beyond the stage when they are obviously commercially viable.

At the university 'bright idea' stage there is every reason for backing research and Government funds should be made

available. This is exactly what we are trying to improve with our new allocating structure discussed this week.

The conclusions of the DTI Alvey and Eureka paper therefore strongly reinforce the argument that as they become more successful less Government money should be put into them.

GEORGE GUISE

CC: BG

CONFIDENTIAL

PRIME MINISTER

ALVEY AND EUREKA

ATTACHED

At E(A) on 6 April you asked me to let you have a note in consultation with Kenneth Baker about the effectiveness of the Alvey and Eureka programmes.

2 Both of these programmes are designed to strengthen UK industry against Japanese and American competition. It is too early to reach a considered view on their effectiveness. There are promising signs that they will give good value for money although it would of course be surprising in any programme of this kind if every single project proved successful. I have taken steps to ensure that both programmes are being monitored carefully. Eureka was launched just over a year ago. Alvey was established in 1983 but it is far from completed and, because of its concentration on leading edge technologies, it was always envisaged that it would not be until the next decade that the full industrial benefits would be realised.

3 Significant progress has, however, already been made. In some 90 projects supported under Alvey an end-product has been identified. Ferranti and STC are now using Alvey results on their integrated circuit production lines. Plessey are currently designing initial application products and Vickers Instruments have already sold equipment developed as part of the programme. Other companies are developing prototypes with a view to full-scale production next year. In the case of Eureka, some 80 UK organisations are

JG2BEN

participating in 40 of the 108 projects announced so far and work is underway of defining the market opening measures required to ensure the commercial success of a number of projects.

4 Alvey has proved to be a highly effective stimulant. Before its announcement there was little sign that we could have met the challenges of fifth generation computing. We have now succeeded in creating a new climate of co-operation between individual companies and between industry and universities and brought together their diverse strengths and abilities. This has helped us to attract back from the US some outstanding UK scientists. In the case of Eureka, the initial feedback is that companies now better appreciate the importance of collaborating with others elsewhere in Europe if their R&D and product innovation is to compete with US and Japanese resources in high technology areas.

5 We have been careful to keep Government funding to a minimum. You may recall that we were instrumental in keeping down the level of support proposed by some of the Eureka participants. My Department applies the same strict criteria to assessing Eureka projects as we do to domestic R&D projects. Industry has to meet at least 50% of the costs and, where the project is closer to the market, at least 75%. In the case of Alvey, we again expect industry to meet 50% of its costs. These levels of Government support are modest compared to those in other countries but in my view they make clear our commitment to maintaining a strong UK R&D capability in these areas while looking to industry to take on substantial funding responsibility.

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6 I attach more detailed notes on both programmes.

7 I am copying this letter and attachments to E(A) colleagues, to Geoffrey Howe, Kenneth Baker, George Younger and to Sir Robert Armstrong.

P.C.

PAUL CHANNON
29 April 1987

DEPARTMENT OF TRADE AND INDUSTRY

JG4AUW

EUREKA - PROGRESS AND EFFECTIVENESS

EUREKA was only effectively launched just over a year ago. The initiative stemmed from a recognition by European industry and Governments that the challenge from Japan and the US required a more effective and concerted European effort to commercially exploit the results of research and development. The UK played a major role in shaping the initiative, in particular ensuring that it did not simply become another centralised public funding mechanism for science and technology and therefore that collaborative projects were initiated, led and financed by industry.

2 The primary purpose of EUREKA is to promote collaboration on projects aimed at producing competitive goods, products and services for markets worldwide. A central feature of EUREKA is the identification of priorities for action on removing market barriers (eg incompatible standards) to the successful commercial exploitation of developments in technology.

3 Substantial progress has already been made:-

- A number of the larger projects are of considerable significance to European industry as a whole, in terms of leading edge technologies, scale and maintaining a viable European presence in world markets; eg the development of compatible High Definition Television Systems, and the European Silicon Structures joint venture (ES2) for the automatic design and production of customised chips. Some smaller products are no less important to the often small and medium sized firms concerned (some 20 SMEs from the UK are already participating in projects and several hundred are

showing an interest in EUREKA). Examples of projects with UK participation are at Annex A.

- Work is already underway on defining the market opening measures required to ensure the success of some projects (eg HDTV and the road traffic systems project, Prometheus).

- In detail, the number of projects announced so far is 108, with a total value of £2.5 billion and individually ranging in size from £1m to £200m. A further 42 project proposals are in varying stages of development. The UK is participating in 40 of the announced projects (worth a total of £0.9 billion). These involve some 80 UK organisations, of which about one third are not seeking financial support.

4 As regards the effectiveness of EUREKA it is too early to gauge this but all the indicators point towards positive results emerging in terms of marketable goods and services, and employment:-

- Feedback from a wide cross-section of industry throughout the EUREKA countries has been very positive, irrespective of whether firms are in receipt of public funds. Many are attracted by the absence of complicated bureaucracy in the administration of the scheme.

- A growing number of UK firms see their future in Europe, partly stimulated by initiatives like EUREKA, and recognise the importance of collaborating with other European partners.

- Similar perceptions are shared by firms and Governments in other countries, as demonstrated by their continued commitment to EUREKA. They are pressing ahead with collaborative projects, often with public funding, to help secure a substantial share in the initial project, and thereby in its ultimate commercial exploitation.

5 The presumption within my Department is that UK participants in EUREKA should be able to find all of most of the finance from internally generated funds or private sector financial institutions. But there are also instances where, because of the nature of the project, the associated risks and the additional overhead of collaboration, a measure of public funding is justified. As with other areas of the Department's support for innovation this means that funding will not be provided unless there is a strong measure of additionality. The rate of support provided is, of course, also limited to a maximum of 50% for research and 25% for development. I can only make about £15m per annum available for EUREKA projects from current resources. This is small compared to France, Germany and Italy and is being quickly outstripped by demand. France (at least £60m per annum), Germany (£40m) and Italy £35m) are committing substantial public funds.

6 In summary, EUREKA has made an excellent start and will provide good value for money as an initiative to promote more competitive UK and European industries.

RTP4/DTI
April 1987

JG6AET

EXAMPLES OF EUREKA PROJECTS WITH UK PARTICIPATION

EU45 : Prometheus

Objective:	Development of concepts and solutions for road traffic systems which are more efficient, economical, safe and environmentally acceptable.
Cost:	£11m for 1 year definition phase; up to £200m for full project.
Timescale:	Up to 8 years for full project.
Countries:	France, Germany, Italy, Sweden, UK.
UK Organisations:	Gaydon Technology, Universities, electronics firms in later stages.
UK Share:	To be agreed for full project.
Market Opening Actions:	Commmunication protocols, radio frequencies, digital mapping.

EU84 : Integrated Home Systems

Objective:	Development of communications system for use inside the home.
Cost:	£16m
Timescale:	2 years.
Countries:	Germany, Netherlands, Italy, Sweden, UK.
UK Organisations:	Thorn EMI, GEC, Mullard.
UK Share:	20%
Market Opening Actions:	Common industrial standard

EU95 : HDTV

Objective:	Development of compatible High Definition Television System
Cost:	£126m
Timescale:	4 years
Countries:	France, Finland, Germany, Netherlands, UK
UK Organisations:	Thorn EMI, Mullard
UK Share:	20%
Market Opening Actions:	MAC compatible transmission standards

EU16 : European Silicon Structures (ES2)

Objective:	Joint European venture offering to the market automatic design and production of silicon chips.
Cost:	£66m
Timescale:	First products on market from 1986/87 onwards
Countries:	Belgium, France, Netherlands, Norway, Sweden, Switzerland, Turkey, UK
UK Organisations:	Joint venture
UK Share:	Joint venture
Market Opening Actions:	-

EU83 : 25KW CO2 Laser

Objective:	Design and consutrction of an industrial 25KW CO2 laser
Cost:	£5m
Timescale:	4 years to product development
Countries:	Denmark, Spain and UK
UK Organisations:	Welding Institute plus sub-contractors
UK Share:	33%
Market Opening Actions:	Possibly safety standards

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ALVEY

The Alvey Programme seeks to provide information technology companies in the UK with some of the enabling technologies which they will need if they hope to be competitive in the world markets of the 1990s. It is far from completed. Some of the 200 joint industrial/academic/Governmental projects are less than six months old. Most projects are still in progress. Only a few have so far been completed.

2 The programme has generated a culture change within the IT community. We have seen a new climate of cooperation between companies and between industry and universities - and, as a result of the ESPRIT initiative, between UK companies and European companies; the attraction of several outstanding individuals back from the United States; a willingness among companies to look for areas of industrial cooperation outside the programme; and higher priority being given by companies to work on standards.

3 Alvey is already having an impact in the market place. The 110 companies in the Alvey Programme are firmly committed to the exploitation of their work, often pulling through to the market place ideas which have stemmed from their academic partners. In some 90 projects an end-product has been identified and exploitation has been undertaken, is in progress or is planned. Examples, taking various specific themes of the Alvey work in turn, are as follows:

- VLSI: the manufacture and design of very large scale integrated circuits. The production lines of Ferranti and STC already reflect Alvey-generated advanced eg STC's use of a two dimensional process

modelling package. Other process modelling packages and improved photographic masks and reticles (masters) are now on the market The Plessey 1 micron ultra high speed process is due to enter production next year; the initial application products are now being designed.

The VLSI equipment industry has already announced products stemming from the programme. Nordiko have an advanced dielectric etcher on the market; Plasma Technology have announced an ion etching system; Vickers Instruments will ship new automated mask measuring instruments to customers in June and have sold 10 sets of new automated magnetic tape head gap measuring equipment; and Lin Tech has an enhanced beam chip test system on the market.

The VLSI Computer Aided Design programme has developed enhancement CAD systems which are already in use. This part of the programme has resulted in a single large project, harmonising the CAD tools and interfaces of most of the leading UK companies in the industry with a common hardware design language being adopted by the UK CAD systems. Moreover, the Alvey programme has led to the widespread adoption of a design interchange format system not only in the UK but also in Europe.

- Software Engineering: the Alvey programme has secured a widespread understanding of the benefits of "formal methods" of specification in the industry with prototype tool sets now being evaluated by customers. Two large software packages to assist in the development of complex software systems are being developed - prototypes are being tested by customers this year and

production is planned for next year. A standard software tool interface standard has been developed, in collaboration between Alvey and ESPRIT, putting Europe in a leading position in the world for such standards.

Knowledge Based Systems: a number of saleable systems have been developed. But the main achievement of this part of the programme has been the development of the large number of UK companies who have now gained experience of the technology, and the capabilities, of Expert Systems. Nine Community Clubs have brought together some 200 user companies in fields such as chemical product formulation, machinery health monitoring, plant quality control and financial decision taking. Several of these clubs are continuing as private ventures with commercial systems emerging from them.

- Computer Architectures: basing work on an Alvey project ICL are now planning their "declarative systems" architecture for their next generation of machines as a collaborative venture with European partners - Bull (France) and possibly Siemens (West Germany) and Philips (Holland).

4 A comparative study carried out last year of Goverment IT industry support programmes showed that total UK support in the period 1983-86, at 4.5 becu, was considerably less than in either France (10.5 becu) or Germany (6 becu). Our future spending plans for 1987-90 were also lower, at 4 becu (compared with 9 becu for France and 7.5 becu for Germany).

5 An Exhibition of the work of more than 90 projects, to encourage exploitation and applications, will be held during this year's Alvey Conference in Manchester in July.

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EDN: Avery Report Nov 82

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Sir Robin Nicholson

PROFESSOR MINSKY AND PARRALEL COMPUTER ARCHITECTURES

The Prime Minister was very grateful for the information contained in your note to me of 3 December. She has not, at this stage, asked for a further note or a presentation.

(MARK ADDISON)
6 December 1985

DBS

Prime Minister. (1)
You will remember Professor Minsky was mentioned at the Plessey lunch, and you expressed an interest. From what Robin says, the UK position in this field is not discouraging.

WO817

MR ADDISON

3 December 1985

Yes please — contact B with this report; or would you be interested in a fuller note?
MEA 3/12

PROFESSOR MINSKY AND PARALLEL COMPUTER ARCHITECTURES

You asked for my advice concerning Professor Marvin Minsky and his involvement in the development of a new parallel computer architecture in the USA.

2. Professor Minsky is one of the leading figures in the Artificial Intelligence field and has had a very significant influence on the development of perception and learning in AI systems. His involvement with the parallel machine mentioned by Professor Gosling to the Prime Minister at Plessey Radar, Chessington, is through an MIT spin-off company called Thinking Machines Corporation. The product in question, called the Connection Machine, is built from a very large array of simple processing elements and is programmed using developments of programming languages current in the Artificial Intelligence and Software Engineering community. The claimed performance is impressive but not (at least as yet) at the levels hoped for in other, similar developments in the US, the UK and elsewhere.

3. There is a world-wide interest in developing parallel computer architectures which will allow computer programs to run much faster than is possible with the conventional architectures now used, where only a small number of processing elements can be used together and, even then, special efforts must be made to exploit the limited parallelism available. The UK has a strong position in this field and two particular UK concepts (the Dataflow machine developed at Manchester University and the ALICE data reduction machine developed at Imperial College) are being combined within an Alvey project (FLAGSHIP), to be announced shortly, which aims to produce a general-purpose parallel computer.

4. Developments like the Connection Machine are being monitored within Alvey and the individual industrial and academic groups involved in this field. There is some doubt about the ability of the Connection Machine, in particular, to

meet its claimed ease of programming and performance when tackling general programming problems (rather than restricted, well-ordered problems such as pattern-recognition), although its development may be a little more advanced than some of its competitors.

5. There are some specific applications in the military field for improved pattern recognition and I understand that Plessey think highly enough of the lead which the Connection Machine currently has to be sending someone to Thinking Machines to assess the work in more detail.

6. In the light of the widespread activity in parallelism of which the Connection Machine is only a part, you may not wish to take this specific contact of the Prime Minister's any further at present, unless she would be interested in learning more of the UK's work in what is undoubtedly an exciting area of research and hear how this compares with other countries. The position is an encouraging one and, if she would be interested in a note on the topic or even a presentation of sonme sort, this could be arranged.

RBN.

SIR ROBIN NICHOLSON
Chief Scientific Adviser

CC NO

MINISTRY OF DEFENCE
MAIN BUILDING WHITEHALL LONDON SW1A 2HB
Telephone 01-218 2111/3 (Direct Dialling)
01-218 9000 (Switchboard)

MO 26/1

5th July 1983

Dear Steve,

ALVEY PROGRAMME: COMPOSITION OF THE STEERING BOARD

Mr Heseltine is content with the proposed composition of the Steering Board described in your Secretary of State's letter of 28th June.

I am copying this to the Private Secretaries to the recipients of Mr Parkinson's letter.

Yours ever,

Jane Ridley

(J E RIDLEY) (MISS)
Private Secretary

S Nicklen Esq

EDUCATION : Amer NN 82

JH 4

(2)

Prime Minister

MLS 5/7

DEPARTMENT OF EDUCATION AND SCIENCE

ELIZABETH HOUSE, YORK ROAD, LONDON SE1 7PH

TELEPHONE 01-928 9222

FROM THE SECRETARY OF STATE

Rt Hon Cecil Parkinson MP
Secretary of State for Trade
and Industry
Ashdown House
123 Victoria Street
LONDON SW1

5 July 1983

Dear Cecil.

ALVEY PROGRAMME: COMPOSITION OF THE STEERING BOARD

Thank you for your letter of 28 June. (copy attached)

I am content with your proposals for the membership of the Steering Board for the Alvey Programme under Sir Robert Telford's chairmanship. I particularly welcome the proposal to include someone who could be seen to represent end-user interests in what could otherwise might appear, and be, a rather specialist Board; though I have no knowledge of Mr Leighfield himself.

My only other comment is to welcome the inclusion of Philip Hughes who will serve to provide a useful link at the top level with the Science and Engineering Research Council, of which Council he is a member.

I am copying this letter as yours, with a copy to Michael Heseltine also.

Yours ever,

Education
Nov-82, Ahern

DEPARTMENT OF TRADE AND INDUSTRY

Room 11.01 Ashdown House 123 Victoria Street SW1E 6RB

Telex 8813148
Telegrams Advantage London SW1
Telephone Direct Line 01-212 3301
Switchboard 01-212 7676

VCCNO

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Secretary of State for Trade & Industry

28 June 1983

The Rt Hon Michael Heseltine MP
Secretary of State for Defence
Main Building
Whitehall
LONDON
SW1A 2HB

Dear Michael,

ALVEY PROGRAMME : COMPOSITION OF THE STEERING BOARD

In his minute of 26 April to the Prime Minister, Patrick Jenkin undertook to consult you over appointments to the Steering Board which, under the Chairmanship of Sir Robert Telford, will inter alia be responsible for overseeing the Alvey Programme.

2 Following discussions between Kenneth Baker and Sir Robert I would, assuming you have no objections, like to proceed with the appointment of Philip Hughes (Chairman of Logica), John Leighfield (Managing Director, BL Systems), Colin Southgate (IT Director, Thorn/EMI) and Keith Warren (Director Technology, Plessey) to the Steering Board.

3 With these individuals, all of whom are highly respected in their fields, we have I believe achieved the balance between supplier and user which is essential if we are to ensure the strong industrial commitment and direction required for the programme to succeed, while preserving the requirement for a small and effective steering body.

4 We need to proceed quickly now to set up this Board and therefore I would be grateful for your agreement by 1 July if possible to proceed with these appointments. I am writing in similar terms to Keith Jospeh.

5 I am copying this letter to the Prime Minister, the Chief Secretary, and to Sir Robert Armstrong.

Yours ever,

Kenneth.

Educ N00 82
Airey

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DEPARTMENT OF INDUSTRY
ASHDOWN HOUSE
123 VICTORIA STREET
LONDON SW1E 6RB
TELEPHONE DIRECT LINE 01-212 3301
SWITCHBOARD 01-212 7676

Secretary of State for Industry

28 April 1983

Michael Scholar Esq
Private Secretary to
the Prime Minister
10 Downing Street
London SW1

Dear Michael, JM 28/4

ADVANCE INFORMATION TECHNOLOGY: THE ALVEY REPORT

Following my letter of 27 April, enclosing a draft statement, I now enclose the final version of the statement which my Secretary of State intends to make in the House this afternoon.

2 I am sending copies of this letter to the Private Secretaries to Members of E Committee, the Lord President, the Secretaries of State for Scotland and Wales, the Lord Privy Seal, the Chancellor of the Duchy, the Chief Whip, Lord Trefgarne, Sir Robert Armstrong, Mr Sparrow and to Bernard Ingham in the No 10 Press Office.

Yours sincerely,

Jonathan Spencer

J P SPENCER
Private Secretary

JU530

STATEMENT BY THE SECRETARY OF STATE FOR INDUSTRY: 28 APRIL 1983

ADVANCED INFORMATION TECHNOLOGY: THE ALVEY REPORT

1 The Alvey Committee was set up last year at the request of the IT industry to investigate the scope for a collaborative research programme in advanced information technology in the light of mounting concern in the industry at the increasing threat of overseas competition. I am most grateful to the Committee for their extremely valuable report. After detailed consultations with industry I am now able to announce the Government's response.

2 The future competitiveness of our IT industry is a subject to which we attach the utmost importance. The report outlines the key areas of technology in which the IT industry must maintain and strengthen its competitive position in world markets. Its theme is the need for collaboration between industry, academic institutions and other research organisations in order fully to mobilise our potential in advanced information technology. The task is beyond the resources of any single enterprise. The central purpose is to pave the way for IT products, IT processes and IT services which can be sold in the market in competition with the rest of the world.

3 We therefore accept Alvey's recommendation to establish a programme of collaborative research concentrated on the four main areas of technology set out in the report. These areas are

software engineering, very large scale integration, man machine interfaces, and intelligent knowledge based systems. Industry has realised the need for collaborative research in these areas, and it is ready to take part in such a programme. This positive involvement of industry in the funding, management and execution of the programme is crucial to its success, if we are to turn successful research into marketable products.

4 The key feature of the programme will be collaboration between companies, Government Research Establishments, and academic institutions. Work carried out in academic institutions will as usual be funded 100% by Government. In the case of work carried out in industry, Alvey recommended that most of this should be 50% Government funded, but that some projects should attract 90% funding. We have considered this last recommendation closely, but have decided that 90% Government funding does not secure a sufficient industrial commitment and could lead to the programme becoming divorced from industry's needs. I have, therefore, decided that all industrial work should be 50% Government funded.

5 Companies taking part will be required to release know-how and to share results with their project partners. They will also be expected to license results on reasonable conditions to others in the programme, and to organisations outside the programme where this is needed to secure exploitation.

6 The report estimated that the research would cost about £350 million over five years. The Government stands ready to support a programme of research on this scale. However, the extent of the Government's contribution to the programme depends upon industry making its contribution and upon the programme's technical progress.

7 The report proposed that academic institutions should carry out some £50 million of research over five years, and industry the remaining £300 million. The full cost of this to Government would be around £200 million. This money will be provided by the Department of Industry, the Department of Education and Science and the Ministry of Defence and, over the PES period, will not add to existing allocations. The Department of Education and Science will fund research through the Science and Engineering Research Council, mainly in the universities. The Ministry of Defence will fund research of particular importance to our future defence industry. The Department of Industry will provide the major portion of the Government's funds and will carry overall responsibility for the management of the programme.

8 A new, small, Directorate will be established in the Department of Industry to co-ordinate the programme. It will be headed by Mr Brian Oakley, currently Secretary of the Science and Engineering Research Council. It will be staffed by people from industry and supported by the Government Departments concerned and the SERC. The Directorate will report to a small supervising

board of industrialists. Sir Robert Telford, who has substantial experience of the electronics industry, has agreed to serve on a part time basis as chairman of the Board.

9 Mr Speaker, this is the first time in our history that we shall be embarking on a collaborative research project on anything like this scale. Industry, academic researchers and Government will be coming together to achieve major advances in technology which none could achieve on their own. The involvement of industry will ensure that the results as they emerge are fully exploited here in Britain to the advantage of our economy. Information technology is one of the most important industries of the future and therefore one upon which hundreds of thousands of jobs in the future will depend. Collaboration will ensure that the results of the research are widely disseminated parrticularly to smaller firms which have such an important contribution to make to the industry. No one can guarantee success, but the Government is convinced that this programme will ensure for British industry secure access to the new technology and to the products and processes on which our future prosperity depends.

[Mr. Roy Hattersley]

amendments set down for Report stage of the Police and Criminal Evidence Bill would change the controversial clauses 9 and 10 out of all recognition. Were those amendments carried, those clauses would be quite different from those which we debated in Committee. Will he consider what I regard as a proper procedure—that of moving a motion which would remit those two clauses to a further Committee stage—so that they may receive proper consideration? I would do my best to assure the right hon. Gentleman that if he followed that practice we would make certain that the Government did not lose any time by making such proper consideration possible for the House.

Mr. Biffen: I am sure that the right hon. Gentleman will appreciate that perhaps this is not the most comfortable position in which to be engaging in such detailed discussion, but yes, I shall look at that suggestion.

Advanced Information Technology

3.59 pm

The Secretary of State for Industry (Mr. Patrick Jenkin): The Alvey committee was set up last year at the request of the information technology industry to investigate the scope for a collaborative research programme in advanced information technology, sometimes, not wholly accurately, called fifth generation computers. That was done in the light of mounting concern in the industry at the increasing threat of overseas competition. I am most grateful to the committee for its extremely valuable report. After detailed consultations with industry I am now able to announce the Government's response.

The future competitiveness of our IT industry is a subject to which we attach the utmost importance. The report outlines the key enabling technologies in which the IT industry must maintain and strengthen its competitive position in world markets. Its theme is the need for collaboration between industry, academic institutions and other research organisations in order fully to mobilise our potential in those technologies. The task is beyond the resources of any single enterprise. The central purpose is to pave the way for IT products, IT processes and IT services that can be sold in the market in competition with the rest of the world.

We therefore accept Alvey's recommendation to establish a programme of collaborative research concentrated of the four main areas of technology set out in the report. Those areas are software engineering, very large-scale integration—advanced chips—man-machine interfaces and intelligent knowledge-based systems. Industy has realised the need for collaborative research in those areas, and it is ready to take part in such a programme. This positive involvement of industry in the funding, management and execution of the programme is crucial to its success, if we are to turn successful research into marketable products.

The key feature of the programme will be this colaboration between companies, Government research establishments and academic institutions. Work carried out in academic institutions will, as usual, be funded 100 per cent. by the Government. In the case of work carried out in industry, Alvey recommended that most of this should be 50 per cent. Government funded, but that some projects should attract 90 per cent. funding. We have considered this last recommendation closely, but have decided that 90 per cent. Government funding does not secure a sufficient industrial commitment and could lead to the programme becoming divorced from industry's needs. I have therefore decided that all industrial work should be 50 per cent. Government funded.

Companies taking part will be required to release know-how and to share results with their project partners. They will also be expected to license results on reasonable conditions to others in the programme, and to organisations outside the programme where this is needed to secure exploitation.

The report estimated that the research would cost about £350 million over five years. The Government stand ready to support a programme of research on this scale. However, the extent of the Government's contribution depends upon industry making its contribution and upon the programme's technical progress.

proffered. I shall draw the attention of the Home Secretary to his point about the important suggestions concerning the parliamentary deposit, but I am sure that the hon. and learned Gentleman will be the first to admit that that is a matter of considerable constitutional significance which is of interest in all parts of the House.

Several Hon. Members *rose*——

Mr. Speaker: Order. I intend to call the six hon. Members who have been standing, then return to the Front Bench.

Mr. Stanley Cohen (Leeds, South-East): Will the Leader of the House reply to the question by my right hon. Friend the Leader of the Opposition about the possible closure, and the Government's attitude towards the closure, of the steelworks at Ravenscraig? What will the effect be on employment, and what will be the economic and social consequences?

Mr. Biffen: The hon. Gentleman raises a significant point. I understand that no firm proposals about the Ravenscraig deal are yet with my right hon. Friend. More generally, I have said that there is a commitment to make a statement on the steel industry in the context of the corporate review.

Mr. David Winnick (Walsall, North): In view of the constant pressure, innuendos and smears used by Ministers against opponents such as those in the CND, when will we have a statement from the Government stating that such KGB tactics of intimidation will cease?

Mr. Biffen: I am not quite clear why it is thought to be a slur to point out that somebody is an open and acknowledged supporter of the Labour party. Doubtless when we come to the more general debates about nuclear weapons, those will be the sort of issues which can be discussed.

Mr. Robert Parry (Liverpool, Scotland Exchange): The Leader of the House will have seen early-day motion 448, which is now supported by 83 hon. Members, concerning the further application for the building of a new Falmouth container terminal. Will he ask the Secretary of State for Transport to make an early and clear statement to the effect that that application will not receive Government support, bearing in mind the strong feelings and concern of all dock workers in all ports which are already in over-capacity?

[That this House opposes the proposal of the promoting company to submit a further application under section 9 of the Harbours Act before the end of April to build a new container terminal in Falmouth; notes that the Falmouth community is opposed to this proposed development, as are communities with existing port facilities, and that the United Kingdom is already over provided with port facilities; and calls upon the Secretary of State for Transport to refuse this application having regard to the strong representations he has received from the Liverpool, dock workers' representatives and those from other port areas.]

Mr. Biffen: I recognise the topicality of that matter on Merseyside and I shall pass the hon. Gentleman's request to my right hon. Friend the Secretary of State for Transport.

Mr. Bob Cryer (Keighley): Pending the debate on defence and disarmament, will the Secretary of State for Defence make a statement to the House expressing the view that he supports the right hon. Member for Chelmsford (Mr. St. John-Stevas) that members of the Catholic church—and of any other church—have the right to speak out on the issue of peace and the preservation of life and against nuclear weapons? Will he at the same time explain that the Government, have not attempted, and that no member or friend of the Government has attempted, to use any element of intimidation against the Catholic church in order to produce Cardinal Hume's statement? Will he also confirm that the Duke of Edinburgh will not be wheeled out as an ally of the Tory party by supporting Tory party policy?

Mr. Biffen: I do not think it is necessary to observe that neither my right hon. Friend the Secretary of State for Defence nor any other member of this Administration would presume to instruct the Roman Catholic church on these matters, and it does not put the debate on the appropriate level to suggest otherwise.

Mr. Dennis Skinner (Bolsover): Does the Leader of the House recall that a few weeks ago his hon. Friend the Member for Plymouth, Sutton (Mr. Clark) mentioned the £2,000 cheques that had been handed by mistake to my hon. Friend the Member for Edinburgh, Leith (Mr. Brown) instead of the SDP Member for Hackney, South and Shoreditch (Mr. Brown)? Does he recall that he acknowledged that appropriate inquiries would be made into that with regard to the Register of Interests, remembering that all hon. Members are expected — although it is not demanded of them—to register their various interests? The handing about of cheques worth £2,000 is an important matter. As the SDP claims to be formed of people of purity and integrity, one would have expected those cheques to be put before that Committee. Has the right hon. Gentleman received any information from the Select Committee — or from its clerk, in response to inquiries—and will he report to the House so that we may all be assured that such cheques and many others that might be knocking around for the election are entered in the appropriate register?

Mr. Biffen: I shall look again at the problem to see if any constructive action might be taken.

Mr. Ioan Evans (Aberdare): Is the Leader of the House aware that there is a great deal of unease in the country about the Government's campaign against CND, not just because of the treatment of Monsignor Bruce Kent, who is a highly respected Roman Catholic priest, but because earlier this week we had the fiasco of the Government's attitude to the Citizens Advice Bureaux which, it is said, was triggered off because Mrs. Joan Ruddock, the chairman, is a part-time employee of the CAB? Do not the Government need to make a statement to reassure the public that they are not indulging in tactics which, as I say, are causing deep concern?

Mr. Biffen: It is a well-known propaganda ploy to make a crude ludicrous assertion and then hope to manoeuvre opponents into denying them. The supposition that anyone in this Government has been trying to exert influence on the Roman Catholic church and on Monsignor Bruce Kent is total nonsense and debilitates the level of argument.

Mr. Roy Hattersley (Birmingham, Sparkbrook): The Leader of the House will be aware that Government

Mr. Tam Dalyell (West Lothian): Window-dressing.

Mr. Jenkin: The report proposed that academic institutions should carry out some £50 million of research over five years, and industry the remaining £300 million. The full cost of this to the Government would be around £200 million. This money will be provided by the Department of Industry, the Department of Education and Science and the Ministry of Defence and, over the PES period, will not add to existing allocations. The Department of Education and Science will fund research through the Science and Engineering Research Council, mainly in the universities. The Ministry of Defence will fund research of particular importance to the future of our defence industry. The Department of Industry will provide the major portion of the Government's funds and will carry overall responsibility for the management of the programme.

A new, small, directorate will be established in the Department of Industry to co-ordinate the programme. It will be headed by Mr. Brian Oakley, currently secretary of the Science and Engineering Research Council. It will be staffed by people from industry and supported by the Government Departments concerned and the SERC. The directorate will report to a small supervising board of industrialists. Sir Robert Telford, who has substantial experience of the electronics industry, has agreed to serve on a part-time basis as chairman of the board.

This is the first time in our history that we shall be embarking on a collaborative research project on anything like this scale. Industry, academic researchers and the Government will be coming together to achieve major advances in technology that none could achieve on their own. The involvement of industry will ensure that the results as they emerge are fully exploited here in Britain to the advantage of our economy. Information technology is one of the most important industries of the future and therefore one upon which hundreds of thousands of jobs in the future will depend. Collaboration will ensure that the results of the research are widely disseminated, particularly to smaller firms, which have such an important contribution to make to the industry. No one can guarantee success, but the Government are convinced that this programme will ensure for British industry secure access to the new technology and the products and processes on which our future prosperity depends.

Mr. John Garrett (Norwich, South): We thank the Minister for his statement, which in general we welcome. We agree with him that the programme set out in the Alvey report is crucial to the development of information technology in this country. Alvey repeatedly drew attention to the urgency of the matter and said that the programme should be under way by April 1983. It is unfortunate that it has taken the Government eight crucial months to respond to this important report.

As Alvey said, what alerted the Government to the issue was Japanese interest in British research. It said that British universities were in the lead in these technologies, but we could capitalise on the lead only by public enterprise because the private sector would not take the risks. If there were no public initiative, we would lie behind Japan, the United States and Europe in commerical exploitation. I am glad that the Government recognised the fundamental point that we have repeatedly stressed about the crucial role of public funding and direction in new technologies.

Does the right hon. Gentleman agree that the refusal to meet the Alvey proposal for 90 per cent. Government funding of some projects means that many small companies will not be able to join the programme, yet that is an area in which much innovation can come from small companies, as we all know? Furthermore, Alvey proposed 90 per cent. funding specifically to assist the disemination of key technologies. It was specific about the areas in which it wanted 90 per cent. funding. Will the spread of new systems be hindered by the penny-pinching restriction of funding to 50 per cent?

The Minister touched only briefly on the implications for education, which are great. Alvey said, as we have stressed that it is

"no good just providing schools with microcomputers".

Alvey called for a massive expansion of teacher training and drew attention to the need now for 500 new trained personnel, 150 new academic posts and 800 new undergraduate places—in effect, a replacement of one quarter of the cuts in higher and university education last year. Is the Minister assured of the will and understanding of the Department of Education and Science in this expansion of higher education staffing? As we know, the Government propose further cuts in university staffing this year.

What is the Government's policy on the multinationals? Alvey said that they should participate in the programme only

"where it is guaranteed that valuable technical information will not leak abroad."

What safeguard does the Minister propose? It is a startling omission that he did not refer to this matter when we know that multinationals are snooping round this public money and wanting to siphon the knowledge that we have in this country back to their countries of origin.

In spite of all the publicity from the Department of Industry — we have all been showered with press releases from the Department—we have a serious trade deficit in information technology, which Alvey and Neddy believe will be no less than £1 billion by 1990 on present trends. What is the time scale to get this massive and important programme under way? We must be running at least a year late now, and time is essential if we are to hold our own, particularly with the Japanese.

Mr. Jenkin: I am grateful for the hon. Gentleman's welcome to the decision, which is one of the most important scientific announcements that has been made in the House for many years.

The hon. Gentleman complained about the delay. He should understand that this represents a novel system of advancing high technology research. We have done a great deal of research in this country over the years, much of which has never been pulled through to the market. We all acknowledge that. The key part of the programme involves wholehearted collaboration with industry — industry funding, industry helping to operate and, of course, industry providing all the funds for the ultimate exploitation of the results in the market. We therefore had to consult hundreds of companies which may be involved and have an interest in the programme. Of course, that took time. I do not apologise for taking that time because it was important to get the issue right.

The hon. Gentleman asked about the decision not to accept the Alvey figure of 90 per cent. I assure him that we are in no sense being penny-pinching or trying to save expenditure. The Government's commitment will

[Mr. Jenkin]

approach 60 per cent. of the total amount involved. Moreover, we wished to ensure that the companies carrying out such research would have sufficient direct interest to make sure that it always remained relevant to the market.

The hon. Gentleman questioned whether small companies would be interested. Small companies are coming forward in large numbers to share in the Community's Esprit programme, where the sharing is on the same fifty-fifty basis. So there are good grounds for assuming that they will wish to do so here.

The hon. Gentleman asked whether we would have the necessary manpower and whether my right hon. Friend the Secretary of State for Education and Science had recognised that need. We have made provision for this. The programme provides for the training of the necessary skills and is designed to go hand-in-hand with the IT new blood initiative which my right hon. Friend has already announced to the House. It will also ensure that the people whom we already have are used for the benefit of the United Kingdom and do not—as, incresingly, in the past—go to work for our competitors.

The hon. Gentleman asked about multinationals. All companies taking part in the programme will be required to meet the same general conditions. They must have research expertise to contribute. They must be ready to collaborate and to accept the rules on intellectual property rights. They must exploit technology arising from the programme within the United Kingdom. Organisations that can meet those conditions will be eligible to put forward proposals to take part. We shall, however, require clear and categorical assurances that work done here does not leak overseas to benefit Britain's competitors.

I believe that the programme will be of enormous advantage to our information technology industry. My hon. Friend the Minister for Industry and Information Technology deserves immense credit for the great efforts that he has made over the past two years to advance the interests of the information technology industry.

Mr. Barry Henderson (Fife, East): My right hon. Friend's statement is welcome, but does he accept that, with a substantial programme such as this, there is always a danger of preference being given to organisations within the London commuter belt and to very large firms with loud voices. Will my right hon. Friend make sure that the benefits of the scheme are spread throughout the country, and that particular attention is paid to the small firms which will be good at innovation? I am sure that if that is done, the results of the programme will improve.

Mr. Jenkin: I am grateful to my hon. Friend for what he said. I assure him that it is our intention that universities, other centres of research and large and small firms throughout the country will have the opportunity to collaborate in the programme, if they can meet the requirements. A university such as Stirling, which has a high reputation in this area, will clearly have a part to play. We are determined that all who can help to forward the work will have an opportunity to take part in it.

Mr. David Penhaligon (Truro): Why does the Secretary of State believe that industry will see the offer of 50 per cent. of the costs as a bargain, when the condition of that contribution is collaboration leading to a wide dissemination of information? Will not the risks involved deter the companies from taking up 50 per cent. of the cost?

Mr. Jenkin: I disagree with the hon. Gentleman. Combining collaboration in the laboratory with competition in the market is something that, in the past, other countries have done better than we have. This is an opportunity for us to show that we can do it as well. As one industrialist said to me the other day, anyone who is not prepared to put up 50 per cent. of the cost of the research cannot have much faith in the programme.

Mr. Tam Dalyell (West Lothian): In answer to my hon. Friend the Member for Norwich, South (Mr. Garrett) the Secretary of State said that his decision on the 90 per cent. was not intended to save expenditure. Will he be fair to the Alvey committee? It gave a range between 90 per cent. and 50 per cent. in paragraph 8.4 of the summary of recommendations, depending upon the particular activity. Surely this should be a matter for discretion, as Alvey argues, not for a straitjacket? The answer to my hon. Friend the Member for Norwich, South should surely be that the Government will allow some degree of discretion.

Will there be help for computer-aided design? The Minister for Industry and Information Technology is nodding, so I assume that the answer is yes.

Mr. Jenkin: I acknowledge that the hon. Gentleman knows a great deal about these matters. We gave careful thought to what the Alvey committee recommended. The hon. Gentleman will surely acknowledge that too often in our scientific and technological history the Government have funded laboratory research to a very large extent—sometimes 100 per cent.—and that such research has never seen the light of day in the market place and so has never benefited our economy. How far we should go is a question of judgment. Our normal limit is 33⅓ per cent. I hope that the hon. Gentleman heard Mr. David Fairbairn of the National Computer Agency say this morning that the argument is between 33⅓ per cent. and 50 per cent., and that if the Government came up with 50 per cent. he, for one, would be well satisfied.

Mr. Patrick McNair-Wilson (Newbury): I congratulate my right hon. Friend on his statement and on his positive response to the report, which will be widely welcomed. However, he should now have urgent discussions with the Chancellor of the Exchequer about the rules governing import duties. Currently, substantially less tax is paid on made-up machines than on individual chips. Those rules need revising in the interests of British manufacturers.

Mr. Jenkin: That point has also been made by a number of firms in the market. As my hon. Friend will realise, import duties are a matter for the Commission, but we are considering the question extremely carefully, and if we think it right to do so we shall make representations to the Commission in the usual way.

Mr. John Grant (Islington, Central): Does not the Secretary of State's statement show a surprising degree of complacency, in view of the Government's loudly proclaimed commitment to the sunrise industries? Does he think that by short-changing industry in the way that he has described, instead of following the Alvey proposals, he will be enabled to compete adequately with the

programmes of the Japanese, the French, the West Germans and the Americans, with their huge Government backing?

Mr. Jenkin: I am astonished at the hyperbole of the hon. Gentleman's question. To describe as short-changing industry the programme I have announced, under which the Government will pay nearly 60 per cent. of a £350 million research programme, is an abuse of language.

Mr. Kenneth Warren (Hastings): I welcome my right hon. Friend's statement, but I suggest that the problem lies less in research and development, in which we are at least 10 years ahead of what the Japanese are trying to get from us, than in marketing. Will the Government, therefore, consider accepting proposals on the marketing of end products rather than just giving all the opportunities to research and development? Is it not possible for the Government to sponsor ideas as to what should be marketed, bearing in mind that the Government are the largest single purchaser of information technology and that the Ministry of Defence, with 10,000 microprocessors on order, could at least supply us with common interfaces for hardware and software?

Mr. Jenkin: I am aware of my hon. Friend's expertise in such matters. However, he will know that the Alvey report was largely produced by people in the industry and represents what they thought necessary. They recognise that in the area of what in my statement I called enabling technology, we cannot yet have an effective place at the table in international collaboration. However, we are determined to see that the research results in marketable products for the benefit not only of this country but of the industry in this country. That is why I laid such stress on the importance of industrial collaboration. This is what industry has wanted—in essence, if not in every detail—and I believe that we are setting about it in the right way.

Mr. Geoffrey Robinson (Coventry, North-West): Does the Secretary of State accept that there is a wide welcome on the Labour Benches for the views of the Alvey committee, on which there were several fully paid-up members of the Labour party? Does he further accept that in deviating from that committee's recommendations he has simply watered down the policy that we would have approved? That is well known to the Minister of State, who served on a board with one of the members of the committee. The Secretary of State should inform himself.

Will the right hon. Gentleman confirm that even now we are still spending far less than our major competitors? Will he take great care that companies already heavily committed and supported in defence research do not benefit disproportionately from this further funding? Will he also ensure that the directorate has sufficient powers to cut corners and push measures through the bureaucratic machine in Whitehall to make sure that something comes out of the programme and reaches the market?

Mr. Jenkin: The hon. Gentleman mentioned bureaucracy. That is why we have gone for a much simpler structure than that recommended by the Alvey committee. In addition to Mr. Brian Oakley, we envisage perhaps four directors—one for each of the key enabling technologies—with industrialists being seconded to do some of the leg work. I entirely endorse what the hon. Gentleman says about the need, perhaps not to cut corners, but certainly to move swiftly. As it is a five-year programme, we must start quickly. I hope that the directorate will be in position within a couple of months and that the first contracts can be put out before the end of the summer.

I hope that the hon. Gentleman will not try to make political points about the membership of the committee. We chose good people. If some of them happened to hold misguided political views, that is nothing to do with me.

Viscount Cranborne (Dorset, South): Does my right hon. Friend agree that the general welcome for the proposals among Conservative Members is noteworthy for their acceptance of a proper Government role in economic investment? Has any substantial financial commitment to the programme been made by private industry in terms of the 50 per cent. that it is expected to contribute?

Mr. Jenkin: We have had clear assurances from a large number of firms that they are ready and eager to put up their share of the funding for a programme that they recognise to be essential if we are to keep up with the field in this important area. There are no specific commitments yet, because until the directorate gets under way there are no specific projects to which firms could subscribe, but I am certain that we shall have no difficulty at all in finding the industrial commitment. If industry puts up its money, the Government will do the same.

Mr. Sydney Bidwell (Ealing, Southall): Has the right hon. Gentleman heard of the plan to close the department of building technology of Brunel university? Will his announcement save that department?

Mr. Jenkin: I rather doubt it, somehow, but I shall certainly draw the matter to the attention of my right hon. Friend the Secretary of State for Education and Science.

Mr. Richard Page (Hertfordshire, South-West): I thank my right hon. Friend for his statement. Is there not the usual danger that the ivory tower attitude of the academics will prevail? When projects are considered will the views of the industrialists be taken into account and indeed have priority, as it is they who will provide the jobs and the employment prospects in the future?

Mr. Jenkin: My hon. Friend's last point is absolutely right. There will be substantial industrial involvement. Industry will contribute money and people and will play a major role in the management of the programme. The programme will not remain in an ivory tower. We must ensure that the results of the research come out of the backroom and into the showroom and result in products, processes and systems that will be marketed throughout the world.

Mr. Bob Cryer (Keighley): After four years of free enterprise, the market philosophy and industrialists standing on their own feet, is it not an admission of failure for the Government now to have to intervene in this way to provide collaborative projects between firms and to recognise the importance of co-operation rather than competition?

Will the Minister tell us more about the supervising board of industrialists? Will its members have financial interests in the industry or will they be independent?

What policing methods do the Government envisage to ensure that multinational companies with important assets in a wide range of countries cannot obtain Government money and then move the ideas from the United Kingdom to wherever they choose? Does not the best means of

[Mr. Bob Cryer]

achieving that lie in public ownership of the ideas and the licensing of users who wish to take advantage of them? Is that not the only sure way to police the use of taxpayers' money and the results achieved?

Mr. Jenkin: If the hon. Gentleman still believes that that is the solution to our industrial difficulties, heaven help him. Public ownership by itself has involved huge, enormous, massive expenditure of public money and in many cases, as the "Horizon" programme showed, has produced absolutely nothing for the market—no jobs, no exports and no added value for this country. The hon. Gentleman's view is utterly wrong. We have never taken a dogmatic view on this. We have always made it clear that there is a role for Government. When the leader of the high-level German industrial delegation that has been here for the past couple of days was asked by the press in which area of British achievement there were lessons for Germany, he said that it was the way in which the British managed research in advanced technology. It is a mixture, a collaboration, a partnership between the public and private sectors and I will defend it until my dying day.

Mr. Garry Waller (Brighouse and Spenborough): I congratulate my right hon. Friend, not only on the far-sighted approach in his statement but on the firm way in which he dealt with the suggestion made by the hon. Member for Keighley (Mr. Cryer). Both will be greatly welcomed by everyone in the industry.

Although few members of the British population will have heard of fifth generation computers, let alone understand much about them, does my right hon. Friend agree that in the longer term there is probably unlimited scope in this area? Does he agree that user friendliness and expert systems mean that fifth generation computer systems will probably be available directly to the great majority of British people, providing enormous scope for industry to develop the talents available in this country for the future?

Mr. Dennis Skinner (Bolsover): The hon. Member is scared of my hon. Friend the Member for Keighley (Mr. Cryer).

Mr. Jenkin: Electors in the constituency to be contested by my hon. Friend the Member for Brighouse and Spenborough (Mr. Waller) and the hon. Member for Keighley (Mr. Cryer) will no doubt get to know a great deal about these matters. I am sure that they will have no difficulty in choosing the candidate for whom they should vote.

I assure my hon. Friend that in what we rather chillingly describe as the man-machine interface the user friendliness of the equipment is extremely important if we are to make the most of these great advances in technology.

Mr. Barry Sheerman (Huddersfield, East): The Secretary of State says that he is not dogmatic, but British universities have suffered four years of dogmatism from people such as his colleague the Secretary of State for Education and Science. The university sector, especially the research element, has been driven into virtual hibernation and many of its most able and highly qualified people have been driven out. Is it not about time that we heard some positive comments from Ministers about the way in which the universities have led in this area of research while private industry has lagged behind and failed to take up the developments in which the universities have led the way? Will universities such as Bradford and Salford, which have been so cruelly used by the Government, receive some of the funds announced by the right hon. Gentleman to expand their programmes?

Mr. Jenkin: The hon. Gentleman would do well to read the statement made by my right hon. Friend the Secretary of State for Education and Science when he met a delegation from the Association of University Teachers the other day. He spelled out the enormous amount that the Government have done for the universities since we came to office.

I do not think that it is helpful to apportion blame because we have not always been able to exploit in the market place the results of the research that we have done. I am sure that the hon. Gentleman would acknowledge that there has developed in the universities in this country a most unfortunate ethos that somehow to make money out of their work is wrong.

Mr. Dalyell: Oh, no—10 years ago.

Mr. Jenkin: Happily, that is changing, and changing rapidly, and not before time. What we want to see is something of that spirit of entrepreneurship which can be seen in so many American universities, where discoveries in the university laboratory which have a commercial potential are swiftly exploited in the market, to the benefit of the individual, the local community and the country.

JH 615

Secretary of State for Industry

CONFIDENTIAL

DEPARTMENT OF INDUSTRY
ASHDOWN HOUSE
123 VICTORIA STREET
LONDON SW1E 6RB
TELEPHONE DIRECT LINE 01-212 3301
SWITCHBOARD 01-212 7676

Agreed by PM
PLS 28/4

27 April 1983

Michael Scholar Esq
Private Secretary to the
Prime Minister
10 Downing Street
London SW1

Prime Minister

Content with Mr Jenkin's draft statement at A ? He intends to make this tomorrow.

WJ
27/4

Dear Michael,

ADVANCED INFORMATION TECHNOLOGY: THE ALVEY REPORT

E(83)2nd meeting on 10 March concluded that further work was needed on various points discussed by E Committee, in particular on the appropriate extent of Government funding and commitment to the programme, on the treatment of intellectual property rights and on the involvement of multi-national companies. Management issues also needed to be settled.

2 My Secretary of State has discussed these issues since E(83)2nd meeting with the Prime Minister and the other Ministers directly involved, and, as you know, it has been agreed that:

a) all industrial work will normally be funded at 50%, funds to be found from within DoI's existing PES allocation. It was recognised, however, that DoI might wish to make a case for funding above the 50% level in a very restricted number of cases, principally involving small companies;

b) the revised funding arrangements necessitated revisions to the IPR proposals, and the rules laid down for participation in the ESPRIT programme should be applied to Alvey;

c) multinational companies should not be excluded from the programme, but their entry should be severely restricted and all possible steps taken to ensure exploitation takes place only in the UK; and

d) management:- the Director should be Mr Brian Oakley (currently Secretary of the Science and Engineering Research Council); he should be appointed for a fixed term on a full-time basis and would be supported by four assistant directors (one for each of the technologies) where possible seconded from and paid by industry. Administrative support would be provided by DoI/MOD/DES;

e) a steering committee comprised of Sir Robert Telford (Chairman) and 4/5 leading individuals in the field should be appointed to ensure the industrial/commercial relevance of the programme.

3 Subject to the Prime Minister's agreement to the management proposals contained in my Secretary of State's minute of 25 April (summarised in paragraph 2(d) above), it is my Secretary of State's intention to announce the Government's response to the Alvey report to the House of Commons on Thursday 28 April by means of an oral statement. I attach a first draft of the statement he proposes to make.

4 I am sending copies of this letter to the Private Secretaries to Members of E Committee, the Lord President, the Secretaries of State for Scotland and Wales, the Lord Privy Seal, the Chancellor of the Duchy, the Chief Whip, Sir Robert Armstrong, Mr Sparrow and to Bernard Ingham in the No 10 Press Office.

Yours sincerely,

Jonathan Spencer

J P SPENCER
Private Secretary

A

JU530

DRAFT STATEMENT

ADVANCED INFORMATION TECHNOLOGY: THE ALVEY REPORT

1 The Alvey Committee was set up last year at the request of the IT industry to investigate the scope for a collaborative research programme in advanced information technology in the light of mounting concern in the industry at the increasing threat of overseas competition. I am most grateful to the Committee for their extremely valuable report. After detailed consultations with industry I am now able to announce the Government's response.

2 The future competitiveness of the IT industry is a subject to which the Government attaches the utmost importance. The report outlines the key areas of technology in which the IT industry must maintain and strengthen its competitive position in world markets. Its theme is the need for collaboration between industry, academic institutions and other research organisations in order to mobilise to the full our technological potential in advanced information technology. The task is beyond the resources of any single enterprise. Yet the central purpose is to pave the way for products, processes and services which can be sold in the market in competition with the rest of the world.

3 We therefore propose to establish a programme of collaborative research concentrated on the four main areas of technology set out in the report. These areas are software engineering, very

large scale integration, man machine interfaces, and intelligent knowledge based systems. Industry has realised the need for collaborative research in these areas, and it is ready to take part in such a programme. This positive involvement of industry in the funding, management and execution of the programme is crucial to its success, if we are to maximise the pull through from research to marketable products.

4 The key feature of the programme will be collaboration between companies, Government Research Establishments, and academic institutions. Work carried out in academic institutions will as usual be funded 100% by Government. In the case of work carried out in industry, the report recommended that most of this should be 50% Government funded, and that some projects should attract 90% funding. We have considered this last recommendation closely, but have decided that 90% Government funding does not secure a sufficient industrial contribution and could lead to the programme becoming divorced from industry's needs. I have, therefore, decided that industrial work should be 50% Government funded.

5 Companies taking part will be required to release know-how and to share results with their project partners. They will also be expected to license results on reasonable conditions to others in the programme, and to organisations outside the programme where this is needed to secure exploitation.

6 The report estimated that the research necessary would cost about £350 million over five years. The Government stands ready to support a programme of research on this scale. However, the extent of the Government's contribution to the programme depends upon industry making its commitment and upon the programme's technical progress.

7 The report proposed that academic institutions should carry out some £50 million of research over five years, and industry the remaining £300 million. The full cost of this to Government would be around £200 million. This money will be provided by the Department of Industry, the Department of Education and Science and the Ministry of Defence and, over the PES period, will not add to existing allocations. The Department of Education and Science will fund through the Science and Engineering Research Council research awarded to academic institutions. The Ministry of Defence will fund research of particular importance to our future defence industry. The Department of Industry will provide the major portion of the Government's funds and will carry overall responsibility for the management of the programme.

8 A new, small, Directorate will be established in the Department of Industry to co-ordinate the programme. It will be headed by Mr Brian Oakley, currently Secretary of the Science and Engineering Research Council. It will be staffed by people from industry and supported by the Government Departments concerned and the SERC. The Directorate will report to a small supervising

board of industrialists. Sir Robert Telford, who has substantial experience of the electronics industry, has agreed to serve on a part time basis as chairman of the Board.

9 Mr Speaker, this is the first time in our history that we shall be embarking on a collaborative research project on anything like this scale. Industry, academic researchers and Government will be coming together to achieve major advances in technology which none could achieve on their own. The involvement of industry will ensure that the results as they emerge are fully exploited here in Britain to the advantage of our economy. Information technology is one of the most important industries of the future and therefore one upon which perhaps hundreds of thousands of jobs in the future will depend. Collaboration will ensure that the results of the research are widely disseminated parrticularly to smaller firms which have such an important contribution to make to the industry. [Already, it is apparent that the programme may well attract back to Britain some of our brightest researchers who have sought wider opportunities abroad.] No one can guarantee success, but the Government is convinced that this programme will ensure for British industry secure access to the new technology and to the products and processes on which our future prosperity depends.

Education
Nov 87, Olney

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CNO. Prime Minister

MES 27/4

PRIME MINISTER

ALVEY

I have seen copies of Patrick Jenkin's minutes of April 22 and April 26 to you and his private secretary's letter of April 27 to Michael Scholar. I am content with the terms of the statement that Patrick proposes to make but have two comments to make on the management of the programme.

2. First, I note that the Directorate which Patrick now proposes is rather larger than the one that was envisaged at our March 24 meeting. I remain unconvinced that this is necessary and would prefer to revert to what we had in mind at that meeting. In any event, however, it should not add to public sector manpower. The Department of Industry will have to reduce numbers by over 300 by April 1 1984 if it is to meet its manpower targets. I have had some discussion with Patrick about this against the background of the extra staff who will be needed for OFTEL and the FMI and we will be discussing it further in due course. I had hoped that the reduction in staff envisaged at our March 24 meeting for Alvey would lessen the difficulties of meeting the Department of Industry's manpower targets. It appears that this amelioration may not now be possible. I should nevertheless make it clear that I could not accept that the staff needed for the Alvey Directorate should be additional to the Department's overall manpower ceilings.

3. Secondly, I note that a steering committee to oversee the programme is being set up. I welcome this and consider Sir Robert Telford to be an excellent choice for chairman. I have no objections to any of the other individuals that Patrick proposes

to appoint but I do feel that the committee could usefully include someone with a little more financial expertise and experience. I hope that Patrick could consider this point when appointing committee members.

4. I am copying to Patrick Jenkin, Michael Heseltine, Keith Joseph, Arthur Cockfield and Sir Robert Armstrong and John Sparrow.

J St. Clere

LEON BRITTAN
27 APRIL 1983

[Approved by the Chief Secretary]

CONFIDENTIAL

JU523

PRIME MINISTER

ADVANCED INFORMATION TECHNOLOGY : ALVEY REPORT

I undertook at our meeting this morning to let you have a short summary of the structure and terms of reference for the Steering Committee and the directorate.

2 Steering Committee - the functions of the Steering Committee will be to

a ensure a clear commitment to the aims and objectives of the programme by participating companies;

b to oversee the research programme and satisfy itself that it was on course; and

c to ensure that the results of the programme are quickly translated into marketable products.

3 The Committee will be chaired by Sir Robert Telford who will be supported by 4/5 leading individuals in the field. I will need to discuss the exact composition of the Committee with Michael Heseltine and Keith Joseph and to consult Sir Robert. But subject to their views, the sort of people I would have in mind are:

4 Directorate - Brian Oakley should be appointed for a fixed term, on a full-time basis, as Director, at the grade of Deputy Secretary. He would be supported by an assistant director for each of the four technologies, at Assistant Secretary level. The aim should be that three of these posts should be filled by

people seconded for two-year terms from their companies and paid for by them. An assistant director for software engineering might need to be paid for by my Department. The directorate, which would be responsible for the day-to-day management of the programme, would be supported from within the resources of my Department, DES and MOD.

5 It is my intention to announce the Government's response to the Alvey Report to the House this Thursday by means of an oral statement. I attach a short passage you might like to include in your speech at the Cutlers' Feast later that day.

6 I am sending copies of this minute to the Secretaries of State for Defence, Education and Science, and Trade, the Chief Secretary and to Sir Robert Armstrong and John Sparrow.

PJ

P J

26 April 1983

Department of Industry
Ashdown House
123 Victoria Street

DRAFT PASSAGE FOR THE PRIME MINISTER'S SPEECH AT THE CUTLERS' FEAST, 28 APRIL 1983

We have today announced that we are prepared to provide over £200 million in the next five years towards the £350 million programme of research in advanced information technology recommended by the Alvey Committee. This programme, the largest of its kind ever mounted in the United Kingdom is designed to ensure that we maintain and strengthen our position amongst the world leaders in information technology.

For the first time industry, the academic world and government will be coming together to achieve major advances in technology and ensure that they are fully exploited here in Britain. This is a programme which requires a scale of effort which is beyond any one company and beyond Government. But together, we can and must ensure that our industry will have secure access to the technology and products on which our future prosperity depends.

SUBJECT

CONFIDENTIAL

cc Master

BM

B/c Mr Evans

10 DOWNING STREET

From the Private Secretary

26 April 1983

Dear Jonathan,

Advanced Information Technology: Alvey Report

The Prime Minister today discussed the management of the Alvey programme with your Secretary of State and with the Minister of State, Mr. Kenneth Baker.

The Prime Minister said that she considered that the structure which was proposed would be too large, too unwieldy, and too unbureaucratic. Similarly, she believed that the advisory committee, as proposed, was ~~also~~ too large. At this size there must be a considerable risk that it would consist of second-rate people from industry.

After discussion, it was agreed that the Directorate should consist of a full-time Director (Mr. Brian Oakley, currently the Secretary of the Science and Engineering Research Council) with four Deputy Directors, also on a full-time basis. Mr. Oakley might have a three-year contract, but the Deputy Directors should all have two-year contracts, with a review at the end of two years. The salaries of the Deputy Directors (it was envisaged that they would be at roughly Assistant Secretary level) would be, with probably one exception, paid for by their companies and the small administrative back-up which would be required should be found from within the Government's existing resources. On the advisory committee, it was agreed that the numbers should be kept down to a maximum of around five, including the Chairman, Sir Robert Telford. The Prime Minister asked for the terms of reference of the advisory committee, and the salaries of its members, and expressed the view that, once the programme was under way, the Chairman would be able to devote a good deal less than two days per week to run the committee effectively. Finally, the Prime Minister said that if these matters were resolved quickly, she had it in mind to include an extended reference to this announcement in her Sheffield speech on Thursday evening.

I am sending a copy of this letter to the Private Secretaries to the Secretaries of State for Defence, Education and Science, and Trade, the Chief Secretary, and to Sir Robert Armstrong and John Sparrow.

Yours sincerely,

Michael Scholar

Jonathan Spencer, Esq.,
Department of Industry

CONFIDENTIAL

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CONFIDENTIAL

FCO= DTI

bcc: Mr. Owen

10 DOWNING STREET

From the Private Secretary

25 April, 1983

Dear Steve,

Advanced Information Technology: Alvey Report

The Prime Minister was grateful for your Secretary of State's minute of 22 April about the management of the Alvey programme.

The Prime Minister considers that these proposals are for too large and too bureaucratic a structure. She does not wish that the staff should be larger than envisaged during the recent discussion by Ministers. Mrs. Thatcher would like to know what is proposed for the part-time director as regards pay, grade, term of office and objectives; and who would pay the salary of the secondees from Industry. She has further minuted that the job of the proposed Director would have to be for a limited term, and that it would not be an indefinite or permanent post. She is also doubtful about the wisdom of making the overall policy direction of the programme the responsibility of a steering committee, as proposed in paragraph 5 of your Secretary of State's minute.

I am sending copies of this letter to the Private Secretaries of the Secretaries of State for Defence, Education and Science and Trade, the Chief Secretary, Sir Robert Armstrong and John Sparrow.

Yours sincerely,

Michael Scholar

S. Nicklen, Esq.,
Department of Industry

DTI

CONFIDENTIAL

No. This is nothing but a Government Committee! And BIG with another part

JF3281

CONFIDENTIAL

PRIME MINISTER

ADVANCED INFORMATION TECHNOLOGY : ALVEY REPORT

At our meeting on 24 March, recorded in your Private Secretary's letter of 25 March, I was asked to identify a suitable director who, preferably on a part-time basis, with the assistance of a small team, would manage an Alvey programme.

2 After very considerable thought, I am convinced that the opportunities which an Alvey programme offers for securing large scale collaboration and co-ordination of our limited resources would not be fully realised if the programme were to be managed by a part-time Director. To derive the maximum benefit from the substantial sums of public money we intend to invest in the programme, to ensure that there is no unnecessary duplication of industrial effort and to ensure a cohesive and industrially relevant programme will, in my opinion and based on my Department's experience, require a dedicated, full-time and somewhat larger staff than envisaged during our discussion.

3 I believe we need a Directorate of 5 people (including the Director) together with a support staff of some 10-12 top-flight technical people, the bulk of whom would be on secondment from industry, to undertake the leg-work. I have written to the leading companies asking them if they would second staff and the

CC NO

(1)

Prime Minister

Agree these proposals?

Agree an announcement, on Thursday - which could be picked up in your speech?

MLS 22/4

Please see, too, Dr Nicholson's note (attached) which endorses Mr Jenkin's proposals.

* if you wanted it on Thursday we'd have to bring forward the Castle White Paper to Wednesday (which could be done).

Pay Grade

Formal advice

objectives?

NO

who pays?

response has been most encouraging. Very modest back-up support would be provided by the three funding Departments.

4 A full-time Director to head this small team is in my view essential; the task facing the Director is a daunting one. We have tried, regrettably unsuccessfully, to find an industrialist to undertake the job. We have, therefore, looked elsewhere and I believe we have found in Brian Oakley, currently the Secretary of the Science and Engineering Research Council, a suitable candidate. In view of his wide experience particularly in sponsoring the electronics industry in this Department and his very high standing in the industrial and academic communities, I believe that he is exceptionally well suited to the task. I would very much like to appoint him.

5 I am however conscious of the need to ensure a strong industrial direction and commitment to the programme. I believe that the best way to achieve this would be to make the overall policy direction of the Alvey programme the responsibility of a Steering Committee comprised of some of the leading individuals in the field and meeting, say, monthly or quarterly; and with a senior industrialist as Chairman who was able to devote about 2 days per week to the programme. I attach an illustrative list of possible members of the Steering Committee; there are at present some important omissions, since at present the list does not for example include representatives of Plessey or Ferranti, both of whom are likely to have key roles in the Alvey programme.

CONFIDENTIAL

Lord Weinstock, I understand, is now reluctantly reconciled to a Directorate.

6 Of these names, I consider Sir Robert Telford to be the best choice as Chairman. Kenneth Baker has discussed the possibility of his being offered the post with Lord Weinstock, who would be prepared to see him take it on. Sir Robert himself subsequently told Mr Baker that he would be delighted to take on this task, and is prepared to make the necessary commitment of time involved.

7 I am of course willing to discuss these proposals with you if you wish but I hope that we can resolve the remaining issues fairly quickly. The industry is very anxious to proceed and I would like to be in a position to make a statement in the House within the next couple of weeks. Michael Scholar suggested that you might wish to refer to the programme in your speech at the Cutlers' Feast in Sheffield on 28 April but he tells me that you did not envisage announcing the programme there. Indeed, I think it should be announced in the House of Commons and followed immediately by a Press Conference. There is great interest in the Alvey programme on the part of the technical press. If therefore we can reach agreement in the next few days I could make a statement next week in time for you to refer to it at the Sheffield. Alternatively, you could foreshadow the statement by some suitable references at Sheffield for which I would be happy to provide a draft.

My thought was that you might wish to include it in the Sheffield speech, but that it would have to be announced to the House first.

MCS 22/4

CONFIDENTIAL

8 I am sending copies of this minute to the Secretaries of State for Defence, Education and Science, and Trade, the Chief Secretary, and to Sir Robert Armstrong and John Sparrow.

P J

22 April 1983

Department of Industry
Ashdown House
123 Victoria Street
LONDON
SW1E 6RB

JF 3286

CONFIDENTIAL

ANNEX

POSSIBLE MEMBERS OF THE ALVEY STEERING COMMITTEE

SIR ROBERT TELFORD: Chairman, Marconi Avionics, a Director of GEC and Chairman of my Department's Electronics and Avionics Requirements Board.

PHILIP HUGHES: Founder and Chairman of Logica one of our leading computer software and systems companies.

JOHN LEIGHFIELD: Formerly with Ford and Plessey now heads BL Systems.

CONFIDENTIAL

cc NO

W.0284

PRIME MINISTER

ADVANCED INFORMATION TECHNOLOGY: ALVEY REPORT

I have seen a copy of the Secretary of State for Industry's minute to you dated 22 April.

2. I strongly support the proposal to ask Sir Robert Telford, Chairman of the Department of Industry's Electronics and Avionics Research Requirements Board, to take on the Chairmanship of the Steering Committee. This is a sensible extension of an existing arrangement and meets the need for an experienced industrialist who will be acceptable to the IT industry.

3. I also support the idea of bringing back Brian Oakley to the Department of Industry and appointing him as Director of the Alvey programme. His recent experience in SERC allied to his previous work in the Department make him very well qualified for the job. It is essential, though, that there is a substantial industrial voice in the Directorate and this will be ensured through the secondment of people from industry - it is significant that industry has shown itself willing to respond to the Department's request in this regard.

4. The proposed size of the Directorate is still larger than you had envisaged. However it is important to get this vital programme of research moving quickly and the need to ensure that a new bureaucracy is not developed may be best met by making the staff available on a short-term secondment basis. The Secretary of State's proposals meet this requirement.

5. I therefore recommend acceptance of the Secretary of State's proposals but you may want to ask that the arrangements be kept flexible, especially with respect to the size of the Directorate, by making the term of the secondments quite short - eg 1 year, and by asking for a review of the size of Directorate at, say, the end of this calendar year.

RBN.

ROBIN B NICHOLSON

Cabinet Office
22 April 1983

cc: Sir Robert Armstrong
Mr Sparrow

EDUCATION
Query Nov 82

CONFIDENTIAL

FILE

RM

MR. NICHOLSON
CABINET OFFICE

ALVEY PROPOSALS: YOUR MINUTE
TO THE PRIME MINISTER OF 15 APRIL

As I mentioned on the telephone to you, the Prime Minister's recollection of her conversation with Lord Weinstock is that he did not support the proposed directorate, and thought it unnecessary and perhaps even counter-productive. The Prime Minister has also asked to be kept in touch with the development of the directorate, and has commented that her impression was that it would be a directorate consisting of one person only.

I will take the opportunity to let her know what my own recollections are of the conversation with Lord Weinstock (as you know they are in line with yours).

I am sending a copy of this minute to Sir Robert Armstrong and John Sparrow.

MCS

20 April, 1983

CONFIDENTIAL

Education

W.0270

19 April 1983

SIR ROBERT ARMSTRONG

ALVEY PROPOSALS - AMENDMENT

Further to my minute of today's date, John Sparrow has pointed out to me that one way round the Director General problem would be to lean harder on industry to provide a seconded Director General rather than simply offering seconded people for the deputy posts.

RBN

ROBIN B NICHOLSON

cc: Mr Sparrow
Mr Scholar
Mr Gregson

CABINET OFFICE

With the compliments of
The Private Secretary to the
Secretary of the Cabinet

70 Whitehall, London SW1A 2AS
Telephone 01-233 8319

CONFIDENTIAL

Ref. A083/1120

DR NICHOLSON

cc Mr Gaydon
Mr Barrow
Mr Scholar (No 10)

Alvey Proposals

Thank you for your minute of 19 April.

2. Sir Peter Carey had already spoken to me yesterday on this subject, and Mr Baker spoke to me this afternoon.

3. Mr Baker described his latest proposals for having a steering committee of industrialists with a Chairman who might do two days a week, and a Director General in the shape of Mr Brian Oakley.

4. I said that I thought that these proposals would need careful presentation to the Prime Minister. As Mr Baker described the proposals, they appeared to envisage a rather larger staff on the directorate than was likely to commend itself to the Prime Minister. I also said that I doubted whether a proposal that Sir Henry Chilver should give two days a week to this work would commend itself to the Prime Minister. It had only been with considerable reluctance that she had agreed that he should be Chairman of the Milton Keynes Development Corporation (which also involves two days a week), and at the price of Sir Henry Chilver agreeing to give up certain peripheral duties. She had only agreed on the understanding that his commitment to ACARD would not be diminished. She simply would not believe that Sir Henry Chilver could add two days a week on Alvey to all of his other commitments, without something going. I realised that Mr Baker was having difficulties, but I thought that he would be well advised to see if he could find a different Chairman.

5. Mr Baker digested this information, and said that he would come back to me within 24 hours.

ROBERT ARMSTRONG

ROBERT ARMSTRONG

19 April 1983

Mr Scholar

With the Compliments of

R B Nicholson

CENTRAL POLICY REVIEW
STAFF

Cabinet Office
Whitehall London
SW1A 2AS

Telephone 01-233 3000

CONFIDENTIAL

W.0265 19 April 1983

SIR ROBERT ARMSTRONG

ALVEY PROPOSALS

The Prime Minister met with an ad hoc group of Ministers on 24 March to discuss the Alvey Report. The record of the discussion is contained in Michael Scholar's letter to Jonathan Spencer dated 25 March.

2. The outstanding items at the end of this meeting were the precise nature of the directorate and steering committee for the Alvey programme and the timing and nature of a public announcement to go ahead.

3. On the question of a directorate and a steering committee, Michael Scholar's note records the decisions in the following way: "On the directorate, it was suggested that if there were no continuing co-ordination of the programme, it would tend to be purely reactive. It would be desirable to avoid a new cumbersome bureaucracy. What was needed was the minimum directorate, building on the work of others to identify projects, to inform industry what these were, and to monitor the use of money, with an eye firmly on the commercial exploitation of the results of the programme. The best solution would be to identify a senior figure in industry in this area who would be prepared to be seconded to Whitehall for two or three days a week, or for a limited period, to get this programme under way. Such an industrialist could, as Lord Rayner did, have round him a small team drawn from industry and the Civil Service.

The Prime Minister, summing up the discussion, said that it was agreed that the Secretary of State for Industry should look for a suitable director, to be seconded from industry on the basis suggested in the discussion. It would be desirable to model the arrangement on that which had applied in the case of Lord Rayner: that is, the director's

salary should continue to be paid by his own company, and it should be envisaged that he would be devoting only a portion of his time to the Alvey programme. ... Your Secretary of State should report back to the Prime Minister when he had identified a suitable director. The Prime Minister would then consider whether the proposals for proceeding with the Alvey programme on the lines above should be considered by E Committee. She had it in mind herself to chair the early meetings of the Committee which would oversee the programme; and it might be that she would herself announce the Government's response to the Alvey Committee's Report."

4. Mr Kenneth Baker has followed up these actions by writing round to industry asking them for nominations to serve on the steering committee and also for nominations for secondment to the directorate. Industry's response to the steering committee has been positive and it seems likely that a number of high-level people from the industry will be prepared to sit on this committee. The response to the call for secondment to the directorate has been less satisfactory and nominations have only been received for programme directors, for three of the four programmes, and not for the Director General. In addition, at least one company (GEC) has questioned the need for a directorate.

5. As a result of these replies I gather Mr Baker intends to act as follows. He proposes that Mr Brian Oakley (presently Secretary of SERC but ex-Department of Industry) should be appointed Director General and that he should pick up the offers for Deputy Directors from industry. For the steering committee he proposes to accept some of the nominations which have been made for members and to ask Sir Henry Chilver to chair the steering committee.

6. Mr Baker has already spoken to Sir Henry who, perhaps mindful of the concerns expressed about the number of public service appointments he holds, has indicated that he would prefer the appointment to be linked in some way with his Chairmanship of ACARD. This seems a bit far-fetched since ACARD is an advisory body whereas the Alvey directorate is an executive body. Equally Mr Baker would not want

Sir Henry's appointment to be tied to his Chairmanship of ACARD which is currently scheduled to finish at the end of this calendar year. Secondly, Mr Baker is about to put these new proposals to the Prime Minister and I feel that her reaction is likely to be adverse for two reasons: first, the directorate is larger than she thinks is necessary, and she was really only sold on the idea at all by the thought that the Director General would be an industrialist, which is no longer proposed. Secondly, I imagine she will take a very dim view of Sir Henry Chilver as Chairman of the steering committee because of his other public service appointments. Unfortunately there seem to be few possible alternatives since any senior person in the industry itself is apparently ruled out because he would not be unbiassed.

7. I recommend that you either meet with or speak with Sir Peter Carey on this topic as soon as possible, because if Mr Baker writes to the Prime Minister as he currently intends, I think that the whole Alvey programme will again become the subject of great controversey. The matter is rather urgent since I gather that it is presently the Prime Minister's intention to announce the Alvey programme in her speech in Sheffield on 28 April.

RBN

ROBIN B NICHOLSON

cc: Mr Sparrow
Mr Scholar
Mr Gregson

Education
Nov '82 Alvey
Report

CONFIDENTIAL

2

Prime Minister

To note Lord Weinstock's letter and Dr Nicholson's proposed reply. MLS 15/4

W.0264

PRIME MINISTER

ALVEY PROPOSALS

Attached is a letter I have received from Lord Weinstock on the subject of the Alvey directorate.

will request it returned.

2. The Secretary of State's letter to Lord Weinstock did not fully indicate the extent to which the original grandiose proposal from Alvey was scaled down to a 'Rayner Unit' type of activity in the Ministerial discussion which you chaired on 24 March.

3. In his discussion with you, Lord Weinstock did accept that there was a need for a unit which included industrialists to identify suitable research projects and inform industry what these were. He suggested that the Alvey Committee itself should be retained to perform that role but the Department of Industry argues that the original Alvey group should be disbanded and a new unit formed. I support their conclusion.

I do not remember this. My recollection is in accord with Weinstock's letter.

4. If you approve, I propose to reply to Lord Weinstock reassuring him that the idea of a large directorate has been abandoned and that a small unit, with a limited lifetime, will be set up to act as an immediate focus for the programme and to perform the tasks he outlined in his discussion with you - hence the desire to have it formed primarily from seconded industrialists.

I would like more about this "small" unit. One person I thought.

RBN

ROBIN B NICHOLSON
Chief Scientist

Cabinet Office
15 April 1983

cc: Sir Robert Armstrong
Mr Sparrow

DEPARTMENT OF INDUSTRY
ASHDOWN HOUSE
123 VICTORIA STREET
LONDON SW1E 6RB

TELEPHONE DIRECT LINE 01-212
SWITCHBOARD 01-212 7676

FROM THE
MINISTER OF STATE
FOR INDUSTRY AND
INFORMATION TECHNOLOGY

KENNETH BAKER'S OFFICE

6401

2

Prime Minister

Support for Alvey.

MRS 13/4

Tim Flesher Esq
10 Downing Street
LONDON
SW1A OAA

12 April 1983

Dear Tim

Mr Baker thought that the Prime Minister should see the enclosed article on the Alvey Report which appeared in this week's Economist.

Yours sincerely

MRS E A RILEY
PRIVATE SECRETARY

M87/M87AAP

tive—in modern Commonwealth practice, a governor-general chosen by and in the country concerned. Proclaiming a republic and retitling a governor-general as a president may seem an impressive gesture; but experience suggests that it has only two practical effects of any importance. It can make it a bit easier for the army to seize power (as in Pakistan in 1958), or for a prime minister to make himself president and then rule as a virtual dictator (as in Sierra Leone in 1971). It is funny that, for protection against these calamities, people should look to the remote descendants of bloodthirsty old warriors; but they do.

Government can help

Not by financing or picking the next generation of super-computing losers, but by paying to get a starter or two to the gate

For several weeks, British cabinet ministers have been dickering over a proposal to spend £250m over five years on advanced computer development. The proposal comes from the industry secretary, Mr Patrick Jenkin, and his information technology minister, Mr Kenneth Baker. It follows the recommendation of a committee of university and industry scientists chaired by Mr John Alvey, senior technical director of British Telecom. It sounds like just the sort of state-intervention-spawned-by-committee that Mrs Thatcher is committed against. It need not be.

The Alvey report came out last autumn in favour of the five-year programme to develop British expertise in four key areas of technology crucial to developing the "super-computers" of the 1990s. Alvey said that two thirds of the £350m needed should come from government. The other third would come from companies taking part. In this way, companies small and large in the private sector would be bound into the project—and the scientific information produced in it would be available to all of them.

How others do it

In the United States, Japan, France or West Germany, there would be no political agonising over such government action. They all do it already. Alvey proposes government pump-priming for initial very-high-risk research; it leaves development and commercial production to the private sector. No British firm is large enough to undertake what Alvey proposes alone. Collaboration between companies and the academic community would in effect be two-thirds financed by the taxpayer—leaving the companies free to profit by developing their own products from the common know-how produced by the programme.

The best example of such effort in the past has been Japan's so-called VLSI programme from 1970. (VLSI stands for very large-scale integration.) This turned Japan into a producer of super-microchips and made possible its entry into the world market for computers, telecommunications and other advanced electronics.

The questions Mrs Thatcher should be asking about the Alvey proposals are: Do their aims matter? Do they need government money in such proportions? Might they work in making Britain an effective competitor on the world market for information technology products?

Advancing British knowledge for application in super-computer products does matter: post-industrial societies are being built on information handling: if Britain is going to be squeezed out of less sophisticated manufacturing by Japan or south-east Asia, it needs to fall back on advanced technology.

As for the need for government money, the cost of fundamental research in electronics is causing problems even in America's Silicon Valley. Despite federal funding for America's electronics industry, estimated by the EEC commission to have totalled some $5 billion in 1981, the independent chip-makers in California are struggling to keep investing their traditional 20% of sales revenue in R and D. Hence the teaming up of Intel, once the leading independent chip-maker, with the computer giant IBM, and the formation of loose research co-operatives among other Silicon Valley companies. Money is not the only problem: the demand for super-electronics researchers does not quickly create its own supply of qualified people.

The sort of government money to avoid is the kind that tries to pick winners, or, as happened with the Inmos microchip company, tries to catch up on the world with one great subsidised bound. Government helps best in technology by getting a starter or two to the gate in time for the race. How much government money? The work identified (not by civil servants but by scientists in universities and companies) is too much for the scientific resources of individual companies. The fact remains that GEC, for one, has a mountain of cash: an argument that ignorantly causes heart-searching in Whitehall and scepticism on the part of that former research scientist, Mrs Thatcher. GEC and others may with some justice be prodded to put up more than a third of the cost of work they will be doing or be involved in. But prod them too far and they will not judge it worth their while to take part at all. Or they will so boss the project that Britain's creative technological smaller fry, essential to the Alvey scheme, will stay out.

Will Alvey, if implemented, launch Britain into the age of super-computers—those machines which laymen will be able to speak to without going through complicated terminals and learning new languages? The frank answer is maybe not. Risk business is not sure business. But taking the risk would at least give Britain a chance to profit from its acknowledged skills in software design, the key to much of tomorrow's super-comput-

ing. Britain has much to offer, too, given such financial backing, in artificial intelligence (which, put simply, means making computers that learn by their mistakes as they go along).

Alvey is proposing no more than a hybrid between straight financing of university research (today virtually 100% from government funds) and selective aid to companies' research and development (today qualifying for grants up to about 33% and unfortunately involving Whitehall in picking winners). Alvey sets out to bridge the very British gap between these two kinds of already-government-financed research. It needs a simple decision of principle in favour of it, excluding politicians from the detail of implementation. This should be left to Alvey's proposed project director working on a short-term performance contract, to agreed budgets and towards agreed technical milestones.

Education

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PA

With the Compliments of

Robin B Nicholson

Mr Scholar. Dr Nicholson, who has seen the attached only this morning, would like a word with you about it and proposes to phone you later in the day.

PS/Dr Nicholson
12/4

CENTRAL POLICY REVIEW
STAFF

Attachments were

1) Ld Weinstock to Dr Nicholson 6/4

2) Ld Weinstock to S/S Industry 6/4

Cabinet Office
Whitehall London
SW1A 2AS

Telephone 01-233 3000

6th April, 1983

Thank you for your letter of 31st March, 1983. I must say at once that I am not in favour of a "directorate" for handling Alvey. I think the job can be perfectly well done by the Department itself, consulting those whose advice it values when and where appropriate.

However, if HMG decides there is to be an Alvey Directorate, I will feel obliged to comply with your request to second at least one high-grade officer of the GEC. This, as you say, would be a considerable sacrifice, and I agree to do it, also as you say, to give a clear indication of the importance we attach to the Alvey programme. What is even more important is that I agree to make the sacrifice despite the fact that it is really quite unnecessary.

Lord Weinstock

The Rt. Hon. Patrick Jenkin, MP.,
Secretary of State,
Department of Industry.

THE GENERAL ELECTRIC COMPANY, p.l.c.
1 STANHOPE GATE · LONDON W1A 1EH
01-493 8484

Confidential

6th April, 1983

Dear Robin,

I daresay you have seen a copy of the Secretary of State for Industry's letter of 31st March, 1983, which is presumably in standard form to several companies. We referred to the question of the proposed directorate during the discussion with the Prime Minister, and you will recall that I thought it unnecessary, and that it could even be counter-productive. I have written as much to the Secretary of State, but in view of the importance of Alvey, and matters flowing from it, I cannot decline to provide someone for this wretched directorate if the Government decides to have it.

These affairs develop a momentum on their own, and sometimes get past the point of no return for want of noise by those who would have it otherwise. I therefore enclose a copy of my reply to the Secretary

/.....

of State, and leave it to your discretion whether you should show it to the Prime Minister, or take any other constructive action.

With best regards,

Yours,

Arnold

Lord Weinstock

Dr. R. B. Nicholson,
Chief Scientist,
Cabinet Office,
70, Whitehall,
LONDON, SW1A 2AS.

6th April, 1983

Thank you for your letter of 31st March, 1983. I must say at once that I am not in favour of a "directorate" for handling Alvey. I think the job can be perfectly well done by the Department itself, consulting those whose advice it values when and where appropriate.

However, if HMG decides there is to be an Alvey Directorate, I will feel obliged to comply with your request to second at least one high-grade officer of the GEC. This, as you say, would be a considerable sacrifice, and I agree to do it, also as you say, to give a clear indication of the importance we attach to the Alvey programme. What is even more important is that I agree to make the sacrifice despite the fact that it is really quite unnecessary.

Lord Weinstock

The Rt. Hon. Patrick Jenkin, MP.,
Secretary of State,
Department of Industry.

SUBJECT

CONFIDENTIAL

RM/HL

Education

10 DOWNING STREET

cc DOT
CSO
MS/001
CPRS
MOD
DES
CO

From the Private Secretary

25 March, 1983

Dear Jonathan,

ADVANCED INFORMATION TECHNOLOGY:

ALVEY REPORT

The Prime Minister held a further discussion about the recommendations in the Alvey Report yesterday evening. The Ministers present were your Secretary of State, the Secretary of State for Trade, the Chief Secretary, HM Treasury, the Minister of State for Industry and Information Technology, and Dr. Nicholson (CPRS)..

In discussion it was argued that it was highly desirable to go ahead, as Industry were strongly advising the Government to do, with a programme of collaborative research in the areas identified by the Alvey Committee. There were strong arguments against Government funding above a 50% level, but it had to be recognised that some of the companies in these fields were very small and had minimal resources of their own, and it was the desire to avoid making this area the preserve of the largest companies which had led to the earlier proposal for 90% funding in some cases. The right conclusion would be to make the standard rate of Government funding 50% with some exceptional provision for going above this level for small companies only if that were inescapable in order to get necessary research done. On this basis the Department of Industry would be able to operate within its current agreed expenditure ceilings within the PES period, and there would be no commitment to funding after the PES period ended. It was noted that no Department would be seeking extra finance for the Alvey programme during the PES period.

On industrial property rights it was argued that arrangements should be put in place which distinguished the club of companies involved in the Alvey programme from the groups of companies involved in each of the various projects within that programme: companies in a project would exchange relevant prior information and would also make the project results available to each other free of charge; whereas companies in the programme as a whole would have a right to a licence to project results for use in their own work in the programme, together with a right to apply for a licence on reasonable terms to use the project results for their exploitation of the results of the programme. In the latter

/case such a

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case such a licence should not be unreasonably withheld: in other words there would be some element of compulsion to grant, or, perhaps, an element of mutual interest in granting, a licence (it was noted that the companies would be fully aware of all these arrangements when deciding whether or not to participate in the programme). It was pointed out that a complex web of such licensing arrangements was already in place in the electronics industry.

On the position of multinational companies, it was suggested that they should not be formally excluded from the programme, but that the conditions for their entry, in terms of their research quality, uniqueness of expertise, collaboration with British companies and so on, should be made very restrictive. The presumption should be that unfriendly multinationals would not be included, but there should be no need to publicise this presumption. If a multinational were included, all possible should be done to ensure that the project results would be exploited only in the UK.

On the directorate, it was suggested that if there were no continuing co-ordination of the programme, it would tend to be purely reactive. It would be desirable to avoid a new and cumbersome bureaucracy. What was needed was the minimum directorate, building on the work of others to identify projects, to inform industry what these were, and to monitor the use of money, with an eye firmly on the commercial exploitation of the results of the programme. The best solution would be to identify a senior figure in industry in this area who would be prepared to be seconded to Whitehall for two or three days a week, or for a limited period, to get this programme under way. Such an industrialist could, as Lord Rayner did, have round him a small team drawn from industry and the Civil Service.

The Prime Minister, summing up the discussion, said that it was agreed that the Secretary of State for Industry should look for a suitable director, to be seconded from industry on the basis suggested in the discussion. It would be desirable to model the arrangement on that which had applied in the case of Lord Rayner: that is, the director's salary should continue to be paid by his own company, and it should be envisaged that he would be devoting only a portion of his time to the Alvey programme. It was accepted that we should go ahead with a collaborative programme in the areas identified by the Alvey Committee. Government funding should normally be no more than 50%, although it was recognised that the Department of Industry might wish to make a case to the Treasury for funding above the 50% level in a very restricted number of special cases. The announcement of the programme should, however, contain no reference to these special funding arrangements. On industrial property rights the arrangements proposed looked complex, but should be workable, given the analogous arrangements which were already in place for the European electronics industry. On multinationals, it was agreed that these should not be excluded from the programme, but that their entry should be severely restricted in the way envisaged in the discussion. Your Secretary of State should report back to the Prime Minister when he had identified a suitable director. The Prime Minister would then consider whether the proposals for proceeding with the Alvey programme on the lines above should be considered by E Committee. She had it in mind herself to chair the early meetings of the Committee which would oversee the programme; and it might be that she would herself announce the Government's response to the Alvey Committee's Report.

/ I am

I am sending copies of this letter to John Rhodes (Department of Trade), John Gieve (Chief Secretary's Office, H.M. Treasury), Neil McMillan (Minister of State's Office, Department of Industry), Dr. Nicholson (CPRS), Richard Mottram (Ministry of Defence), Imogen Wilde (Department of Education and Science) and Richard Hatfield (Cabinet Office).

Yours sincerely,

Michael Scholar

Jonathan Spencer, Esq.,
Department of Industry.

W.0210

PRIME MINISTER

ADVANCED INFORMATION TECHNOLOGY: ALVEY REPORT (E(83) 7)

Background

Following the meeting of E Committee on 10 March, you asked the Secretary of State for Industry to arrange for officials urgently to do further work on the points discussed by the Committee. Since that time there have been several meetings of officials from the relevant Departments which I have attended. As a result the Secretary of State for Industry now feels able to come to a meeting of an ad hoc group of Ministers with some revised proposals. In the meantime you have heard Lord Weinstock's views on the original proposals.

Main Issues

2. The main issues which the Secretary of State will address are as follows:-

(i) Finance: the proposal for 90 per cent Government funding will be dropped so that the standard rate will be 50 per cent with some exceptional provision for going above this level for small companies only if that is necessary to get the research done. This change will also allow the Department of Industry to operate within its current PES estimates. Thus no Department will be asking for extra money for the programme over the PES period.

(ii) Industrial Property Rights (IPR): the loss of the 90 per cent funding rate means that proposed IPR arrangement cannot work since it depended on the 90%/50% differential. Instead the Secretary of State will be proposing arrangements along similar lines to those already formulated by the European

electronics industry for ESPRIT. These differentiate between the club of companies involved in the Alvey programme, the groups of companies involved in the various projects within the programme, and companies outside the club:

(a) companies in a project exchange relevant prior information and make the project results available to each other free of charge;

(b) companies in the programme have a right to a licence to project results for use in their own work in the programme and a right to apply for a licence to use the project results for their exploitation of the results of the programme, in both cases under "reasonable conditions";

(c) companies outside the programme can only be licensed if the results are not exploited by the club within a reasonable period of time.

(iii) Multinationals: multinationals will not be excluded from the programme but their conditions for entry in terms of research quality, uniqueness of expertise, collaboration with British companies etc will be severe. Those companies which have traditionally worked closely with British industry, eg Mullard, Cossor, will find it easier to take part than those who haven't, eg IBM.

(iv) Directorate: the Secretary of State will say that his proposals build on existing arrangements, eg the sponsor Divisions and Requirements Board system in DoI, the CVD collaborative work in electronics in MoD, and the specialist committees in SERC. If there were no change in the current arrangements, the programme would only be responsive which is an inadequate way of making best use of resources in a rapidly moving field. There is a need for leadership, focus and coherence in the programme which the Director General must provide. The danger of the programme developing into the Director General's whim is countered by having a Management Board composed of industrialists whose eyes will be firmly

on commercial exploitation of the results of the programme. The Director General will expect the majority of proposals to come from groups of companies which are collaborating naturally; he will not be there to plan or enforce this. His method of operation is based on the successful operation of the DoI's "UK 5000" programme for the development of CMOS gate arrays. The proposed size of the Directorate is a Director General plus three or four professional staff in each of the four major research areas, most of these people being seconded from industry or appropriate parts of the Civil Service.

3. I believe from Lord Weinstock's comments to you that he would be fully satisfied with the proposals in (i) and (iii) above and also he would presumably be content with (ii) since GEC is a member of ESPRIT. In his comments on the Directorate he accepted the need for leadership in identifying the most important research projects and for the existence of a Management Board, but he would probably feel it could be done with fewer people than outlined in 2(iv). If the Directorate are given short-term (say 2-year) contracts, the full staff may be needed to get the programme going quickly and a smaller group might be sufficient subsequently.

4. It is likely that the proposals in 2(i) will satisfy the major concerns from Treasury. The Secretary of State for Trade may well feel that collaborative research and the treatment of IPR will not work in practice. Lord Weinstock admitted that there were risks in collaborative research but that other countries made it work and we had some encouraging experience in MoD's CVD electronics programme; on balance it was a risk worth taking. On IPR it should be remembered that there are vast differences from one sector of industry to another: for example the pharmaceutical industry relies heavily on the protection of formal patents and huge margins for the life of the patent on a few drugs; the electronics industry relies on building up proprietary know-how which is not formally protected, a rapid transfer of know-how to product, and a high rate of new product introduction.

Handling

5. The Secretary of State for Industry is not circulating a new paper for this meeting but will wish to make an opening statement to introduce his revised proposals. The Chief Secretary, Treasury and the Secretary of State for Trade will wish to comment on his statement and you may wish to take discussion on each of the four main issues 2(i) - (iv) in turn.

Conclusions

6. You will wish to conclude from the discussion of the ad hoc Group:

(i) whether the points which were raised at E have been adequately dealt with by the Secretary of State for Industry's revised proposals

and if not which areas should be given further attention;

(ii) if the revised proposals are satisfactory, whether the matter should be brought back to E for final approval so that other members of E will feel that they have been party to this important decision;

(iii) what preparations should be made for the announcement of the programme and whether you wish the Secretary of State for Industry to announce it or whether you prefer to announce it yourself bearing in mind your responsibility for science and technology matters which cover several Departments.

RBN

ROBIN B NICHOLSON
Chief Scientist, CPRS

Cabinet Office
23 March 1983

10 DOWNING STREET

Prime Minister

Alvey

(1) You might find it useful to refresh your memory of your conversation with Lord Weinstock (I wrote the attached note purely for our own convenience and have not circulated it).

(2) There is also a brief by Robin Nicholson enclosed.

MLS 23/3

SECRET AND PERSONAL File da

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22 March 1983

I enclose, for your own information only, a copy of the record of the Prime Minister's discussion with Lord Weinstock about Alvey on Friday.

I would be grateful if you would ensure that this is neither photocopied nor circulated outside your Private Office.

MICHAEL SCHOLAR

Jonathan Spencer, Esq.,
Department of Industry.

SECRET AND PERSONAL

Education

(1) 6

(2) 7/4

10 DOWNING STREET

(1)

Prime Minister

Alvey

Smaller group please

Now that you have discussed with Lord Weinstock would you like to talk further with the Ministers concerned, as suggested in Robert Armstrong's note (at Z attached)?

Or would you like a smaller group – Arthur Cockfield, Patrick Jenkin and Leon Brittan, together

24 Hour at 1630 C.S. 21/3

PTO

with Dr Nicholson?

MCS 18/3

SUBJECT
& Master

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NOTE FOR THE RECORD

ALVEY REPORT: LORD WEINSTOCK

Lord Weinstock called on the Prime Minister this morning at 0900 hours at her request to discuss the Alvey Report.

Lord Weinstock said that the Japanese had had great success in collaborative research with government involvement. This had given them the 64K Ram market which we had been unable to secure, notwithstanding expenditure of £115 million on INMOS. We had a long distance to travel to catch up, and he thought that the collaborative route offered promising possibilities. He agreed with the Prime Minister that the funding split proposed by the Alvey Committee was wrong. There should be no question of a 90:10 split in favour of industry. The proper ratio was 50:50. This would ensure that industry had a proper stake in the research which was carried out. It would be unnecessary to create a new bureaucracy to handle these arrangements. The Department of Industry was already dispensing Government money, on the basis of one-third grants. They could go on doing so, although there would be advantage in the Alvey Committee identifying suitable research projects and informing Industry what these were. Lord Weinstock said that he agreed with the Prime Minister that there was a risk, if multi-national companies were involved, of a leakage of potentially profitable knowledge to other countries. The wrong way to deal with this would be to say that multi-national companies could not apply for these funds. They should be allowed to apply and should be turned down, if it was judged either that they had no need of the funds (for example, if IBM were to apply) or that the knowledge would be used by our competitors to Britain's disadvantage. Dr. Nicholson suggested that a judgement might be made in individual cases: if, for example, an applicant multi-national / offered a particularly promising research team, it might be worth taking a risk of some leakage overseas. The Prime Minister and Lord Weinstock thought this might be a possible approach. Lord Weinstock

/commented

commented that there might be advantage in making it a condition of these grants that at least two companies were involved: each company would look very closely at its collaborative partner, and would be well aware of the risks of sharing its secrets with potential competitors overseas.

Lord Weinstock said that it would be important that only one grant were made in respect of each research project which was identified. The companies (and there were not more than 20 British companies in this category, and probably no more than a dozen) would have to get together and make an application for this grant. Although collaboration was always a somewhat cumbersome process, it would be useful in bringing in different interests, as well as in spreading costs. Lord Weinstock said that he was not in principle in favour of government funding for research. But our competitors were deeply involved in such funding and we had to match them. He had in mind a programme of £50 to £60 million a year of Government money for five years, matched pound for pound with private sector.

Concluding the discussion, Lord Weinstock said that GEC had recently allocated £6 million from their central funds for essential research. They normally insisted that such funding be undertaken by their constituent companies, and reflected in the prices of their products. But if they had stuck to their normal principle, essential research work would not have been done. The funding envisaged by the Alvey Committee seemed to him to be an analogue to this for the Government. He thought that it would be money relatively well spent. Nobody could guarantee that the expenditure would produce results. But he thought it was a risk worth taking.

The Prime Minister thanked Lord Weinstock for letting her have his views on this matter.

MCS

18 March 1983

Prime Minister

A useful agenda

MLS 17/3

W.0200

PRIME MINISTER

THE ALVEY PROPOSALS

I believe the following key points of Alvey are the ones on which you may wish to get Lord Weinstock's opinion tomorrow.

2. Is this the right research to do?

There is a broad consensus world wide that the four topics (Very Large Scale Integrated Circuits, Man Machine Interface, Software Engineering and Intelligent Knowledge Based Systems) are the key to future IT products and services where very large markets are predicted.

3. Will the research be done regardless of Alvey?

Probably it will. Universities will apply to SERC, Industry will put proposals to DoI Requirements Boards, the MoD will have its in-house and industrial R & D programme. The volume and cost of the research to Government and Industry will not be greatly different from the Alvey proposals.

4. Why is Alvey needed then?

The key to Alvey is the formation of an industry-led "club" also including Universities and Government Departments. The club will pool some of its research results to provide a larger and better research base from which members can more effectively initiate product development efforts. Thus Alvey is proposing a more efficient use of research effort to benefit UK industry.

5. Who gains least from Alvey?

The large companies (eg GEC) and the larger Government Departments

in this area (eg MoD) because they already have relatively large research bases.

6. Who gains most from Alvey?

Small entrepreneurial companies and University Departments who want to develop better links with industry.

7. Is Alvey anti-competitive?

No. The pooled activity only provides a technology base. Companies compete normally in the development of products and processes from this base.

8. What happens abroad?

The Japanese companies cooperate on "pre-competitive" research. The Americans have industry clubs which place research contracts with Universities and Research Institutes.

9. How important is the Director General?

He is only key in providing a focus for decisions on what research to do and where to do it. Alternatives are the present arrangements in DoI, MoD and SERC with better interdepartmental coordination or a lower profile Directorate as exists for the CVD work (which is largely microelectronics) in MoD.

10. What about the multinationals?

There is a straight choice between using all the UK resources in this highly competitive field and using three-quarters of it but reducing the risk of leakage of research results abroad.

11. Is the 90 per cent Government funding essential?

No, it was an opening bid from certain parts of the industry. Some differential in Government funding between research results which must be pooled and research results which are the property

of the contractor is desirable - say 65 per cent and 40 per cent rather than the proposed 90 per cent and 50 per cent.

Finally, it is noteworthy that Derek Roberts, Technical Director at GEC was a member of the Alvey Committee and has featured prominently in the presentation of its proposals to DoI Ministers.

RBN

ROBIN B NICHOLSON
Chief Scientist

Cabinet Office
17 March 1983

cc: Sir Robert Armstrong
Mr Sparrow
Mr Gregson

BF

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10 DOWNING STREET

From the Private Secretary

MS

Prime Minister

Alvey Report

Lord Weinstock will come in at 0900 on Friday to discuss the above but he wants you to know that he is not conscious at that hour in the morning!

Will soon live with it.

E.L.

16.3.

Education

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HL

bcc JV

10 DOWNING STREET

From the Private Secretary

SIR ROBERT ARMSTRONG

Alvey Report: Next Steps

The Prime Minister was grateful for your minute AO83/0815 about the next steps in relation to the Secretary of State for Industry's proposals about the Alvey Report.

The Prime Minister intends to have a talk with Dr. Nicholson within the next few days.

She has minuted that she does not expect to take the matter much further in her discussion with Dr. Nicholson because he is not an expert about the structure which will need to be put in place to ensure the maximum exploitation of the research which the Alvey report envisages; and which will also preclude leakage via multinational companies to other countries. The Prime Minister wishes to pursue her consideration of what would be the best structure through a small meeting with the Secretaries of State for Industry and Trade and perhaps also with some industrialists with relevant practical experience. I am accordingly writing to the Secretary of State for Industry's Private Office asking for suggestions about who should be invited to such a meeting and with what preparation.

M. C. SCHOLAR

Postponed until after meeting with Lord Weinstock + Dr Nicholson on Friday 18/3.

14 March 1983

CONFIDENTIAL

Ref. A083/0815

PRIME MINISTER

Alvey Report: Next Steps

I have been considering what might be the most useful next steps in relation to the Secretary of State for Industry's proposals about the Alvey Report, following the discussion in E Committee yesterday (E(83)2nd Meeting).

2. I suggest that the first step might be for you to have a talk with Dr Nicholson so that he can give you, in as much detail as you would like, his views on the proposals and can receive guidance from you about the points which are of particular concern to you and need to be dealt with in the further work which has now been commissioned. If you can find the time, I think that it would be desirable to try and arrange this for the early part of next week.

3. I would then propose to arrange a round of official discussion under Cabinet Office chairmanship (Mr Gregson) during which Dr Nicholson and other Departments concerned, particularly the Treasury, would have the opportunity to probe the Department of Industry's proposals further and to work out with them how the points of difficulty identified in the Committee's discussion and in your talk with Dr Nicholson might be met. Depending on the timing of your talk with Dr Nicholson, this might take place at the end of next week (say Friday 18th March).

4. The Secretary of State for Industry would then be in a position to consider and, depending on his own views, to put forward amended proposals for discussion at a small group chaired by you just before Easter. This might consist of the following:

Chancellor of the Exchequer
Secretary of State for Education and Science
Secretary of State for Defence

/Secretary of

Secretary of State for Industry
Chief Secretary, Treasury
Secretary of State for Trade
Mr Sparrow
Dr Nicholson

You might also like to include the Secretary of State for Scotland, although he is not strictly speaking essential, because he expressed a particular interest in the subject at E Committee and has views about the Scottish multinationals.

5. If agreement can be reached in your small Group, I think that there would then be advantage in asking the Secretary of State for Industry to bring his proposals back to E Committee for final approval. This would avoid giving those members not included in the small Group the impression that they are being shut out of important decisions. It would also give the Secretary of State for Industry the opportunity to make up for his earlier rebuff in front of the Committee.

6. I should be grateful to know whether you agree that we should proceed on these lines.

ROBERT ARMSTRONG

11th March 1983

Education

CONFIDENTIAL

P.0982

PRIME MINISTER

Advanced information technology: Alvey Report
(E(83)7)

BACKGROUND

In March 1982 the Minister of State, Department of Industry (Mr Baker), set up a committee under Mr John Alvey (Senior Director Technology at British Telecom) to explore the scope for a UK collaborative research programme in Information Technology (IT). The Committee reported in September 1982, recommending that a programme of research in four key areas (very large scale integration, software engineering, man/machine interface, and intelligent knowledge-based systems) should be established at a cost of about £350 million over 5 years. Of this, industry was expected to find £110 million and Government £240 million. The departments involved in the funding would be the Department of Industry, the Ministry of Defence, and the Department of Education and Science.

2. The Alvey Report is discussed in the memorandum by the Secretary of State for Industry (E(83)7). This recommends that the Government should endorse the principles of the Alvey programme; that a unit should be set up in the Department of Industry, probably under a distinguished outside appointee as Director General and with strong industrial representation, to manage the programme. The Ministry of Defence and Department of Education and Science can find the sums required for their share of the funding, at least for the remainder of the current public expenditure survey period (to 1985-86); but the Secretary of State for Industry says that he can find only a relatively small part of the £150 million which is the DoI share of the £240 million mentioned in paragraph 1 above. He therefore asks for additional public expenditure provision of £25 million over the three years to 1985-86, and gives notice that up to a further £70 million will be needed over two or so subsequent years.

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3. E(83)7 also raises a number of more detailed points:

a. the ownership and use of intellectual property rights (IPR) in respect of research funded partly by Government (paragraph 13);

b. the extent to which the programme should rely on international collaboration (paragraph 14);

c. how far, and under what conditions, multi-national companies should be allowed to participate (paragraphs 15 and 16).

MAIN ISSUES

4. The main issues before the Committee are as follows:

i. does the Government endorse the general principles recommended by the Alvey Committee, ie that there should be a UK collaborative programme involving Government, industry and the academic world in the four key areas of advanced information technology?

ii. if so, should Government funds be provided on the scale proposed by the Secretary of State for Industry?

iii. should the programme be managed by a unit set up within the Department of Industry on the lines proposed?

iv. what guidance should be given to officials on IPR, international collaboration, and the role of multinationals?

v. how and when should the Government's decisions be announced?

General approach

5. So far as we are aware, there is general agreement among departments and outside opinion that the Alvey Committee's recommendations are technically sound.

It has also been accepted by Ministers that in the area of advanced information technology Government has a role to play in stimulating and assisting British industry to establish itself in a vital new market.

Funding

6. Treasury Ministers are likely to argue that the funding proposed in E(83)7 is unnecessarily generous. It is proposed that the Government should provide up to 90 per cent of the funds in software engineering and intelligent knowledge-based systems. This is unusually high for support to industrial research. It may be argued that Government should provide no more than 50 per cent. The Alvey Committee argued however that there was a special case for a high funding percentage in software because of the undercapitalisation of that industry, and in intelligent knowledge-based systems because of the long timescales of that research (arguably more akin to scientific research which is funded at 100 per cent). Moreover the average Government funding is only 60 per cent for the industrial programme and 68 per cent for the programme as a whole, after allowing for the 100 per cent funding of education and academic research. To fund at 50 per cent throughout the industrial programme would save only about £20 million.

7. The second issue is whether the Secretary of State for Industry's bid for new money (£25 million over the three years to 1985/86, and £70 million over the two or so subsequent years) should be accepted. Treasury Ministers are likely to argue that whatever level of funding may be agreed should come out of existing programmes.

8. Finally, the Committee may wish to discuss how the Government's financial exposure can be limited if it does back the programme. It is not clear whether the commitment would be to provide an agreed sum of money or to ensure that agreed results are achieved. The latter could prove to be an expensive open-ended undertaking: much of the research will be at the frontiers of technology; and it is notoriously hard to predict the relationship between expenditure and results in such areas. Although paragraph 9 of E(83)7 refers to the need for programme milestones, and to ensure that the Government does not become committed

to ever larger expenditures, paragraph 21(iii) talks of seeing the programme 'through to completion'. The Committee may wish to invite the Secretary of State for Industry, in consultation with the Chief Secretary, Treasury and other Ministers involved, to discuss in more detail how to ensure that the Government's commitment is not effectively open-ended.

Programme management

9. It could be argued that it would be preferable to set up the body which is to coordinate and manage the programme outside Government departments (perhaps on the lines of the Manpower Services Commission). However, it seems likely that the Committee will be willing to accept the proposal for a unit within the Department of Industry in paragraphs 11 and 12 of E(83)7, so long as there is a strong industrial element and the Director General is allowed to manage the programme without day to day interference.

Other matters

10. You will wish to explore whether the Committee has any views on the three matters dealt with in paragraphs 13 to 16 of E(83)7, ie:

a. on IPR it will presumably be agreed that the extent to which firms will be free to exploit research results partially funded by Government will be important, that it will be necessary to state the rules clearly in any contracts, and that this is a matter needing early attention by officials;

b. on international collaboration the Committee is likely to accept the view that although we should be willing to cooperate in suitable international programmes, we cannot rely on such programmes for our main effort;

c. on the role of multinationals the Committee is likely to agree that, although it would not be sensible to exclude participation by multinationals, any programme should benefit the UK, not other countries; officials will however need to explore whether the approach outlined in paragraph 16 of E(83)7 can be made to work.

Announcement

11. We understand that, if the proposals are agreed, the Secretary of State for Industry will wish to make an early announcement, probably in the course of the Budget debate. You will wish to establish how and when the announcement is to be made and to invite the Secretary of State for Industry to clear a suitable text in correspondence with the other Ministers mainly concerned.

HANDLING

12. You will wish to ask the Secretary of State for Industry to introduce his memorandum. You might then ask the Secretaries of State for Education and Science and Defence to contribute and to confirm that their views are correctly represented in E(83)7. You might then invite the Chancellor of the Exchequer or the Chief Secretary, Treasury to comment. Mr Sparrow may wish to give views, particularly on the science policy and IT aspects.

CONCLUSIONS

13. You will wish the Committee to reach conclusions on:

i. whether the Government endorses the principles of the Alvey programme;

ii. whether the Government is willing to provide funding on the scale recommended in E(83)7 and, if so:

a. how much, if any, new money should be provided;

b. whether any steps need to be taken to ensure that the Government's financial commitment is not open-ended;

iii. whether the proposed arrangements for programme management are satisfactory;

iv. whether officials should be given any guidance on further work on, in particular, intellectual property rights, international collaboration, and multinational companies;

v. the method and timing of an announcement.

PLG

P L GREGSON

9 March 1983

CONFIDENTIAL

Ind. Pol. GC FM

4

DEPARTMENT OF INDUSTRY
ASHDOWN HOUSE
123 VICTORIA STREET
LONDON SW1E 6RB
TELEPHONE DIRECT LINE 01-212 3301
SWITCHBOARD 01-212 7676

JF2764
Secretary of State for Industry

23 February 1983

The Rt Hon Sir Geoffrey Howe QC MP
Chancellor of the Exchequer
HM Treasury
Parliament Street
LONDON
SW1

Prime Minister:

The response to the Alvey Committee report which the Sofs for Industry proposes will come to E on 10 March.

JF 24/2

Dear Geoffrey,

INFORMATION TECHNOLOGY : ALVEY

Last March, Kenneth Baker set up a Committee under the Chairmanship of John Alvey of BT to explore the scope for a collaborative research programme in advanced information technology. The Committee reported last September and recommended that a programme should be established at a cost of some £350 million over five years.

2 Since the report was delivered, my Department has carried out extensive consultations with industry, with DES and MOD who it is proposed should also contribute towards the cost of the programme and with your officials. As a result of these consultations I am convinced of the need to mount a programme. My proposals, supported by Keith Joseph and Michael Heseltine, ... are set out in the attached paper, for discussion at the Health of Industry Group Meeting on 1 March.

3 I am copying this letter to the Prime Minister, Keith Joseph, Michael Heseltine, Norman Tebbit, Leon Brittan, Tom King, John Sparrow and to Sir Robert Armstrong.

Yours ever

Patrick

JU873

CONFIDENTIAL

A PROGRAMME FOR ADVANCED INFORMATION TECHNOLOGY : The Report of the Alvey Committee

A paper by the Secretary of State for Industry

BACKGROUND

1 In the light of concern in the British electronics industry at the competitive threat posed by the Japanese Fifth Generation Computer Programme launched in October 1981, Kenneth Baker set up a committee to explore the scope for a UK collaborative research programme in Information Technology (IT). The Committee was chaired by Mr John Alvey, Senior Director Technology at British Telecom and comprised industrialists, academics and civil servants. A summary of the Committee's Report is at Annex A.

THE NEED

2 Access to advanced technology is essential if UK industry is to compete in world markets. Reliance on overseas sources is becoming an increasingly less viable option; access is subject to political and commercial restrictions which would place us in an uncomfortable position of strategic weakness. For example, recent moves in the United States in the VLSI area suggest that even if industry were able to obtain this technology, its use would be restricted and it would not necessarily be available at the right time to give British companies a viable presence in the market. While we cannot expect to become totally selfsufficient, access to the enabling technologies must be secured. This is the aim of the programme. Dependence on overseas sources would not only damage our future competitiveness, but our trading deficit in IT products - currently £1 billion per annum - would continue to worsen.

3 Not only is the technology crucial for the IT industry, it is essential for the rest of manufacturing industry which increasingly needs to incorporate IT in its production processes and products; to do so effectively and efficiently requires a strong home IT industry capable of supplying the manufacturing sector with advanced products embodying the latest technology. The service sector too depends on a strong UK IT industry able to supply the advanced systems which it needs for its own efficiency and competitiveness. The Alvey programme cannot guarantee success, but it increases the chances for British companies. Without it they will certainly fall further behind.

4 The present UK effort is highly fragmented. We are not making the most of our research strengths. The programme presents a unique opportunity to harness the resources of industry, higher education and Government. Within higher education, the programme would encourage technology transfer to industry and keep skilled researchers in the UK. Indeed it could attract expatriate researchers back from the United States.

EXPLOITATION

5 The aim of the programme is to produce results which industry can exploit in open competition in the market. We shall seek to ensure that the programme is commercially directed: results should begin to emerge early on. The burden of exploitation will fall on industry. This burden will be considerable even though the results of individual projects will be widely disseminated. I have considered carefully whether industry can find the resources for this. My assessment is that provided the non IT companies (e.g Unilever, Shell) continue with their growing efforts in these areas and we maximise the constructive involvement of the multi-nationals, industry will find the funds required to ensure exploitation.

6 My Department has carried out extensive consultations with industry on the importance and commercial relevance of the Alvey proposals. Industry endorses the thrust of the proposals and is ready to collaborate in a programme on the lines recommended by Alvey. Like the Secretaries of State for Education and Science and Defence I am convinced of the need to mount a programme.

THE PROGRAMME

7 I propose a programme of collaborative, essentially strategic research involving industry, higher education, the Research Councils and other bodies into what Alvey terms the "enabling" technologies - those which will underpin all IT products and processes of the future. The four enabling technologies selected by Alvey and endorsed by industry are:

a Software Engineering
b Man/Machine Interface;
c Intelligent Knowledged Based Systems; and
d Very Large Scale Integration.

A short explanatory note of these technologies is at Annex B.

8 The programme is drawn up on the following grounds:

a it reflects the UK's requirements, strengths and weaknesses; it is not a re-planted Japanese programme;

b it is realistic to build on the UK's strengths, but limited resources demand collaboration; as the technology becomes more complex it places growing demands on human and financial resources - demands which are beyond even our largest companies;

c future access to the technology from overseas cannot be guaranteed and, even if it could, a domestic capability is essential to adopt technology originated overseas;

d the IT market is growing rapidly and the programme should encourage (and not distort) competition between UK companies for this market; and

e the programme should not be mounted at the expense of other important Government programmes for IT.

9 The programme would consist of a series of projects. By setting milestones against which to assess performance and decide on future funding we can halt any project which no longer has commercial relevance. In this way the Government can make sure it does not become committed to ever larger expenditures.

HUMAN RESOURCES

10 Alvey's call for an increase in the number of people skilled in IT is very important. Sufficient human resources exist within industry, higher education and Government establishments to undertake the programme. However, successful exploitation of its results will require more skilled manpower than is presently available. The recently announced DES programme to increase the numbers of those with qualifications relevant to IT is vital and the Alvey programme and this DES programme must proceed in unison.

MANAGEMENT

11 Success will depend to a large degree on how the programme is managed. After considering a number of options I have accepted Alvey's proposal of a new Directorate in the Department of Industry, headed by a director general reporting to a Management Board with strong industrial representation which would set overall strategy. The Directorate would be small in number (about 30 people) including staff (mainly at senior level) seconded from industry. I believe that these arrangements, which industry supports, will ensure co-ordination of the programme

with other Government programmes for IT and provide the necessary accountability for the large sums of public money involved. The management chart at Annex C reflects this.

12. The post of Director General is crucial. Candidates currently under consideration are: Mr John Fairclough (Technical Director, IBM (UK)), Mr Brian Manley (Managing Director, Philips Business Systems), Mr Gordon Edge (Chairman of PAT Centre), Mr Brian Oakley (Secretary, Science and Engineering Research Council), Sir John Adams (ex CERN),

None of these individuals has yet been approached.

PROPERTY RIGHTS AND DISSEMINATION OF INFORMATION

13 Widespread dissemination of the results of the programme is the key to commercial success. Dissemination will be an important task of the Directorate. But dissemination depends on ownership of industrial property rights (IPR). I accept Alvey's proposal that where the Government funds at 90% the company or companies involved should own the IPR but should make the results available on a free, irrevocable and non-exclusive licence basis to other UK companies. At the 50% funding level the companies involved will again own the IPR, but licences will be available to others where the companies involved do not intend to exploit the results.

INTERNATIONAL COLLABORATION

14 Many projects might be tackled internationally. UK companies might collaborate with European companies, supported by bilateral Government to Government agreements, or on a Community basis within the European Strategic Programme for Research in Information Technology (ESPRIT). We shall support all these approaches. We should ensure that a UK national programme takes the fullest advantage of what is available at the European level. We have in fact been strong supporters of ESPRIT. But it is taking time to develop and many not materialise on a significant scale. We cannot therefore rely on ESPRIT. This view is shared by our French and German partners who are supporting their own industries with national programmes. Nevertheless a UK programme would provide a base from which to participate effectively in ESPRIT and influence its direction.

MULTI-NATIONALS

15 Alvey's proposals in relation to foreign multi-nationals operating in the UK are seen by some as restrictive and by others as a bit naive. We need to balance the risk of valuable technology "leaking" from the UK against the risks of being seen to discriminate against inward investors and of excluding

companies which have much to offer and which have demonstrated their commitment to the UK.

16 Some multi-nationalis do have a lot to offer the programme; others do not. As a broad principle I would favour opening the programme to any multi-national which carries out significant research in the UK, which has demonstrated its commitment to operating here and which can give - and fulfil - an appropriate guarantee that the results of work funded under the programme will not be made available outside the UK. In practice this will dictate a case by case approach, but it is fairly clear that some of the largest firms may be unable or unwilling to give any sort of guarantee that could meet Alvey's intention. The fact is that if we want these firms' participation we will have to recognise that a price must be paid in terms of 'leakage' overseas.

FUNDING

17 The Report proposes a programme which is costed at around £350 million over 5 years of which some £240 million would come from Government and some £110 million from industry. The Report recognised that the Government's contribution involved essential components from three Departments - Education and Science (through SERC, UGC and NAB), Defence and (the largest part) my own.

18 I understand that the Department of Education and Science is ready, on the basis of present plans for public expenditure to provide funds within their IT initiative that would secure, in the years to 1985/86, the basic academic research related to the Alvey programme and rather more than the increase in the output of appropriately qualified manpower which Alvey envisaged. I also understand that the Ministry of Defence is ready to contribute some £40 million.

19 On the basis of the Report and making reasonable assumptions as to the DES and MOD contributions, my Department would be expected to find around £150 million over the 5 years. However, having considered the matter, I regard the suggested build-up rate of expenditure as optimistic. On a more realistic estimate my Department would expect to spend approximately £50 million over the 3 years to 1985/86 (end of PES period). Half of this could be found from our existing allocation; the remainder (£25 million) would need to be new money. Assuming the programme proceeds satisfactorily (and this will obviously be a matter for annual review both within PES and in detail in its own right by the responsible Departments) both DES and my Department would need additional new money in the years after 1985/86. For my own Department, assuming broad continuance of current support levels in other areas, I would expect to be able to contribute a further

£30 million towards Alvey after 1985/86, leaving up to £70 million of new money to be found. For its programmes related to Alvey the DES would need only slightly to increase the annual level of spend to be established in 1985/86 (about £23 million) in the following two years, by perhaps an additional £5 million in each year. The wider implications, for DES programmes, of the manpower needs for IT overall would need to be assessed separately and would depend on the success of the Alvey programme.

CONCLUSION

20 The programme is not without risks. The research is highly complex. Collaboration on the scale envisaged has not been tried before in the UK. I propose therefore that when the programme is launched it should be made clear that the Government's commitment has to be matched by a commitment from industry, which must demonstrate that it will collaborate and make its contribution to the cost of the programme. If that commitment is demonstrated as the programme develops from year to year, then the Government would continue to fund its share up to the levels envisaged in the Report.

February 1983

MP

ANNEX A

A SUMMARY OF THE ALVEY REPORT

Remit

1 The Committee was set up in March 1982 under the chairmanship of Mr John Alvey, Senior Director Technology British Telecom , with the following members:

Mr I Barron Managing Director, INMOS

Mr C Haley Director Product Line Planning, ICL

Mr P Hughes Chairman, Logica Holdings

Professor R Needham Director, Cambridge University Computer Laboratory

Mr C Read Director, Inter Bank Research Organisation

Mr D Roberts Research Director, GEC

Dr K Warren Director Technology and Strategic Planning, Plessey

Mr B Oakley Secretary, SERC

Dr H Davies* Deputy Controller Research Programmes , MOD

Mr A Macdonald Under Secretary, IT Division, DoI

Mr J Major Under Secretary, LA Division, DoI

* succeeded by Dr A Johnson, Director General Research and Chief Scientist, RN

2 Alvey's remit was to advise on the scope for a collaborative research programme in IT. This followed mounting concern in the IT industry over increasing competition from overseas, highlighted by the announcement in late 1981 of Japan's Fifth Generation Computer Project, which aims to put Japan in a leading position in computer technology by 1990.

The Programme

3 Alvey proposes a programme estimated to cost some £350m over 5 years, covering advanced research and design tools in four enabling technologies (VLSI, Software Engineering, Man Machine Interfaces and Intelligent Knowledge Based Systems) and the creation of a communications network to assist research in these technologies. The programme was drawn up in consultation with a wide range of industrial, academic and other expert opinion, and took account of overseas developments as well as studies being carried out for the EEC's Esprit initiative.

Programme coverage

4 The programme's coverage is based on the following considerations:

(a) VLSI: This technology allows complex systems to be fabricated on a single silicon chip. More added value is now being embedded in silicon, and the world market for integrated circuits is forecast to grow at an annual rate of some 24% between now and 1987 when a market of some £22B is expected. The main market opportunity for the UK is expected to be in custom design chips. Progress is needed in materials, design and processing techniques;

(b) Software Engineering: Current software methods are under strain. New techniques and tools are needed to produce cheaper, more reliable software to exploit the rapidly growing market for software products, and to support the systems and equipment industry. By

the end of the decade the software element in IT systems is expected to outvalue hardware. Advanced software is therefore vital for our overall IT capability.

(c) IKBS: The key aspect of IKBS technology is the use of "inference techniques" to operate on knowledge bases. Conventional computer systems look up data bases and return stored data. IKBS infer additional information depending on the context, in the same way as human beings. Progress in IKBS technology is vital for the spread of IT, particularly in the information-dependent industries. The immediate market for IKBS is small, and some see only limited opportunities in the short term, but the long term prospects are promising.

(d) Man Machine Interfaces: This technology is growing in importance as systems become more complex and users more numerous and less expert. Progress in fields such as speech and image processing and input/output devices and understanding of the human factors affecting the use of IT systems offer considerable commercial pay-off.

Programme Strategy

5 The thrust of the programme is to mobilise the UK's technical strengths in IT through a collaborative effort between industry, the academic sector and research organisations in order to achieve a UK capability in each of the enabling technologies. Alvey argues that this capability is a necessary, though not a sufficient, condition for the future competitiveness of the IT industry.

6 According to Alvey the capital and human resources required to build up this capability are beyond those of any single organisation, so collaboration is needed. The report recommends a high level of Government funding to stimulate this collaboration and to enable the results of the programme to be widely disseminated and exploited, particularly by smaller firms. A liberal regime for IPR is proposed to allow this.

Cost and Funding

7 The estimated cost of the programme over five years is:

	£m
Software Engineering	70
VLSI	90
CAD (for VLSI)	25
Man Machine Interfaces (MMI)	44
Intelligent Knowledge Based Systems (IKBS)	26
Communications	19
Demonstrators	58
Education	20
	352

8 Some £56m of this would be for education and academic research which Alvey recommends should be 100% Government funded. The rest of the programme would be carried out by industry. The level of Government funding would be 50% in most cases, but with provision for

funding up to 90% in software (because of the general undercapitalisation of the software industry) and in IKBS (because of the long timescales of this research). Overall Government would provide 60% of the funds for the industrial programme and 68% for the total programme, ie some £238m over five years.

9 The report recommends that DES/SERC and MOD should provide funds as well as DoI. Alvey stresses that industry, in addition to its contribution to the cost of the programme, will need to provide substantial funds in order to translate the technology which emerges into marketable products.

Management

10 Alvey recommends that a new Directorate should be set up in DoI to manage the programme under a Director handpicked for the job with the powers to implement the programme. The Director would be accountable for broad strategy, but not for individual decisions, to a re-vitalised Electronics and Avionics Requirements Board (EARB) and would be financially accountable through normal DoI procedures. Alvey recommends that MOD and SERC should also be closely involved in the programme's management, should channel funds into the Directorate, and provide it with some staff. Other staff would be seconded from industry.

Timescale

11 Alvey sets out a programme for five years but the report emphasises that work in some areas, particularly IKBS, should continue beyond this period; and that new sectors of technology may need to be incorporated at a later date. On the other hand, Alvey

stresses that commercially exploitable results will emerge within a couple of years of the start of the programme.

12 To encourage early results and to provide effective control of the programme, Alvey proposes that there should be explicit milestones to guide the programme's management. The report specifies examples of these milestones.

13 The programme is conceived as a UK effort. The report states that "foreign multinationals should participate only where they can contribute a particular asset vital to the programme; where the results of their involvement will be available to the benefit of UK industry as a whole; and where it is guaranteed that valuable technical information will not leak from the UK".

Human resources

14 Alvey stresses that skilled human resources are a key factor for the success of the programme. Alvey says that we have the manpower to launch the programme; but recommends an urgent increase in the future supply of skilled manpower in order to complete the programme and for industry to exploit its results. Measures to increase the supply of human resources are included in the recommendations, but the report stresses that this whole area needs continuing priority from Government.

The Alvey Report is concerned with four key enabling technologies:- Software Engineering, Man-Machine Interface, Intelligent Knowledge Based Systems, and Very Large Scale Integration; the following briefly describes each of these and their inter-dependence and explains their relevance in a programme for Advanced Information Technology (AIT).

SOFTWARE ENGINEERING

A small demonstration computer program is not difficult to write; almost anyone can do it with a small amount of training. Writing programs for real computer applications is less straightforward and requires professional staff supported by good techniques and tools. It is not that the program instructions are any different, the difficulty arises from the immense complexity generated by the need correctly to develop and manage thousands (or even millions) of simple instructions. Hence software engineering is concerned with supporting the software development process so as to achieve higher quality products more economically.

The kinds of product that will emerge from the AIT programme will involve the development of extremely large programs. The techniques and tools available are barely adequate for to-day's products - they will be totally inadequate for to-morrow's products. Thus the programme includes R & D in advanced software engineering. The UK is considered to be a leader in software development, and the fruits of this work will help to keep our companies in the forefront of the software industry.

MAN/MACHINE INTERFACE (MMI)

Initially computers were used for scientific calculation and business data processing, and man interacted with machine using relatively crude mechanisms such as punched cards and printed output. More recently the keyboard/visual display unit has improved the situation and made interaction more immediate. But even the VDU requires some skill in operation and lacks the sophistication required by new applications. The AIT programme is concerned with these new applications when the machine interacts not with a trained specialist operator, but directly with the person for whom the application is to benefit, or more bluntly, the 'man in the street'.

Thus MMI is a key enabling technology. Basically man wishes to communicate through the spoken word and by the presentation of visual images (both text and picture). Machines can read and write text without difficulty and they go some way towards good presentation of pictorial information. But much needs to be done in the areas of speech handling and image processing, as well as ensuring that such technology is endowed with user friendly and ergonomic features.

INTELLIGENT KNOWLEDGE BASED SYSTEMS (IKBS)

Of the four key enabling technologies IKBS is the most central. AIT is concerned with quite new applications of computers and communications. Hitherto, applications have been of a routine information handling nature where the high speed of electronics has enabled things to be done that were otherwise too big to tackle by manual methods. But now the power of the microchip is becoming so great that applications in which machines can be used to exhibit some semblance of intelligence are becoming feasible and economic.

IKBS is concerned with the development of systems which, by capturing within them sufficient expert knowledge in a particular subject area, can use and process that knowledge to give intelligent assistance. A typical example would be one that aids in medical diagnosis: the knowledge of previous case histories forms the base and with this a patient's symptoms can be processed to give expert advice to the doctor or consultant. The prospects for future research are still a long way from developing anything equivalent to the human brain, but IKBS does imply a significant step forward in widening the range of feasible applications, and therefore products. To-day's computer designs and programming methods are quite inadequate, however, and new designs and methods need to be researched.

VERY LARGE SCALE INTEGRATION (VLSI)

The ability to pack on to a single microchip hundreds of thousands or even millions of electronic circuits is the basis of all these developments. Hitherto, microchip hardware has been associated with the mass production of large quantities of relatively few component parts, and then the assembly of these parts to make a whole machine. The UK has not been a leader in this area and there have been strong arguments supporting the acquistion of the basic components from other countries. But with VLSI it is now possible to get whole computers on a single microchip and sizeable machines at that. This gives rise to a trend to less mass production and to more custom-made components for specific applications. Thus we need the technology to develop small quantities of many different microchips both economically and rapidly, and in this situation it is much less reasonable to rely on foreign sources.

The AIT programme includes R & D for the UK to develop its own capability of producing the VLSI microchips that will be needed to implement the new applications. The need is both to acquire the silicon processing technology and to develop computer-aided design facilities that can handle the complex process of microchip design within the minimum of time.

INTER-DEPENDENCE

Products emerging from AIT research will generally rely on all four key enabling technologies, but each technology also depends to a large extent on the others. The inter-dependencies are briefly summarised thus:

- IKBS relies on the hardware economics of VLSI and on advanced development tools from Software Engineering; without either IKBS will be impractical. Improved MMI is necessary for IKBS to interface meaningfully with the people who have to be served.

- MMI techniques will also be strongly influenced by the hardware economics of VLSI.

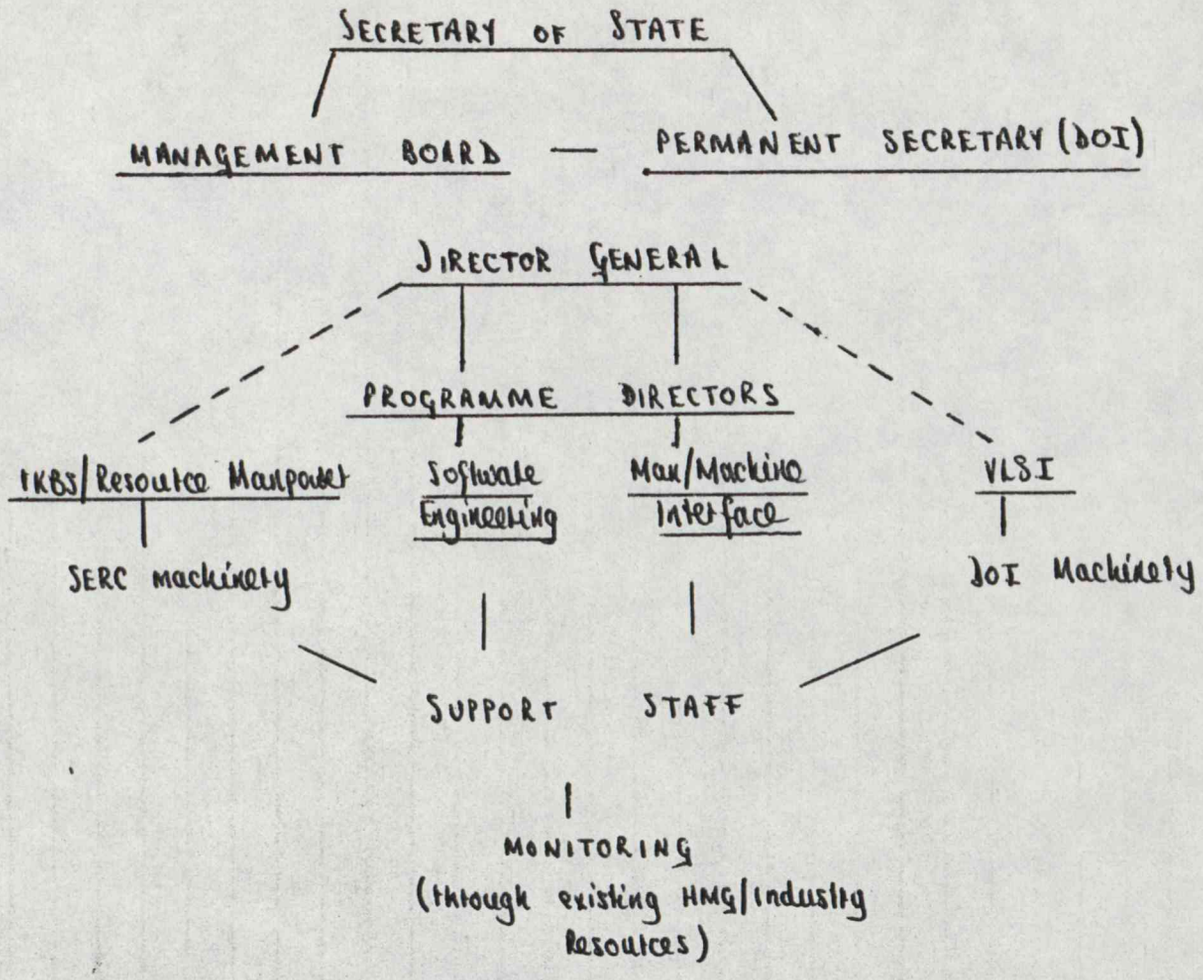
- VLSI makes all the rest economically possible through the availability and rapid development of complex custom-made components; Software Engineering tools will play an important role in the necessary advanced computer-aided design and manufacturing methods for VLSI. In the long run, IKBS products will be able to assist in the design process.

- Software Engineering will be assisted by IKBS products, particularly in respect of cost reduction, improved flexibility and accuracy of performance.

Thus AIT depends on all four technologies and there can be no question of selecting a subset. On the other hand there is some flexibility in which the UK could concentrate its research efforts; there will be scope for an AIT programme to pick and choose, and to limit or extend its involvement in any particular area as time goes on.

ANNEX C.

ALVEY PROGRAMME - PROPOSED MANAGEMENT STRUCTURE.



Lille

BU 28/2
EDUCATION

10 DOWNING STREET

From the Private Secretary

14 February 1983

Dear Imogen

During the course of another discussion today, the Prime Minister raised with your Secretary of State the complaint which had been made to her on her recent visit to Somerville College, Oxford, that the College could not, as a single-sex institution, obtain one of the new blood posts because there was a non-discrimination requirement. The Prime Minister said that if this was so, the provision ought to be changed. Your Secretary of State undertook to look into the question. Could I ask you for a note on the points raised by the Prime Minister, to reach this office by Monday 28 February.

Yours ever

Tim Flesher

Timothy Flesher

Mrs. Imogen Wilde,
Department of Education and Science.

10 DOWNING STREET

THE PRIME MINISTER

31 January 1983

Dear Mr Cohen.

Thank you for your letter of 13 January about the Alvey report on behalf of the IT advisers. I am grateful for your views on this report.

As you know, the report was submitted to the Department of Industry in September 1982. The Department has since been consulting the IT industry over the Alvey proposals to establish the extent to which industry supports the Alvey recommendations and its willingness to participate in a collaborative programme. These consultations are now complete. We are aiming to announce a decision on Alvey soon. Meanwhile as you will know Sir Keith Joseph has recently announced provision of £100m. to increase the supply of those with qualifications relevant to IT, in line with Alvey's recommendations on manpower.

Thank you for your offer to assist in expediting the main Alvey recommendations. I am sure that the IT advisers could provide valuable advice to those managing a programme on the lines proposed in the report if we decide to go ahead with it.

Yours sincerely

Margaret Thatcher

I. Cohen, Esq.

HL

GR
pre dispatch
letter.

PRIME MINISTER

You will recall receiving the attached letter from the IT advisers about the Alvey Report. A copy of the letter together with a summary of the report and a draft reply is attached. The Secretary of State for Industry proposes to accept the Alvey Report and will put his proposals to colleagues in February. As you will see from paragraph 7 of the summary, this would cost some £350m. over five years. I gather that Ferdie Mount will wish to put a minute to you about this when Mr. Jenkin puts forward his proposals, that need not, however, delay the reply to the IT advisers.

TB.

28 January 1983

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Remit

1 The Committee was set up in March 1982 under the chairmanship of Mr John Alvey, Senior Director Technology British Telecom , with the following members:

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Mr P Hughes Chairman, Logica Holdings

Professor R Needham Director, Cambridge University Computer Laboratory

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Mr D Roberts Research Director, GEC

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Mr B Oakley Secretary, SERC

Dr H Davies* Deputy Controller Research Programmes , MOD

Mr A Macdonald Under Secretary, IT Division, DoI

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the end of the decade the software element in IT systems is expected to outvalue hardware. Advanced software is therefore vital for our overall IT capability.

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9 The report recommends that DES/SERC and MOD should provide funds as well as DoI. Alvey stresses that industry, in addition to its contribution to the cost of the programme, will need to provide substantial funds in order to translate the technology which emerges into marketable products.

Management

10 Alvey recommends that a new Directorate should be set up in DoI to manage the programme under a Director handpicked for the job with the powers to implement the programme. The Director would be accountable for broad strategy, but not for individual decisions, to a re-vitalised Electronics and Avionics Requirements Board (EARB) and would be financially accountable through normal DoI procedures. Alvey recommends that MOD and SERC should also be closely involved in the programme's management, should channel funds into the Directorate, and provide it with some staff. Other staff would be seconded from industry.

Timescale

11 Alvey sets out a programme for five years but the report emphasises that work in some areas, particularly IKBS, should continue beyond this period; and that new sectors of technology may need to be incorporated at a later date. On the other hand, Alvey

stresses that commercially exploitable results will emerge within a couple of years of the start of the programme.

12 To encourage early results and to provide effective control of the programme, Alvey proposes that there should be explicit milestones to guide the programme's management. The report specifies examples of these milestones.

13 The programme is conceived as a UK effort. The report states that "foreign multinationals should participate only where they can contribute a particular asset vital to the programme; where the results of their involvement will be available to the benefit of UK industry as a whole; and where it is guaranteed that valuable technical information will not leak from the UK".

Human resources

14 Alvey stresses that skilled human resources are a key factor for the success of the programme. Alvey says that we have the manpower to launch the programme; but recommends an urgent increase in the future supply of skilled manpower in order to complete the programme and for industry to exploit its results. Measures to increase the supply of human resources are included in the recommendations, but the report stresses that this whole area needs continuing priority from Government.

Education cc J.V.

DEPARTMENT OF INDUSTRY
ASHDOWN HOUSE
123 VICTORIA STREET
LONDON SW1E 6RB
TELEPHONE DIRECT LINE 01-212 3301
SWITCHBOARD 01-212 7676

JF2492
PS/ Secretary of State for Industry

26 January 1983

Tim Flesher Esq
Private Secretary to the
Prime Minister
10 Downing Street
LONDON
SW1

Dear Tim

Thank you for your letter of 14 January attaching a letter from Mr Cohen on behalf of the IT advisers about the Alvey Report.

2 The Department has now completed its consultations with industry over the report. There is strong support from industry for Alvey's recommendations and a willingness to participate in a collaborative programme. My Secretary of State is aiming to put proposals for implementing Alvey to his Ministerial colleagues in February.

... 3 A draft reply for the Prime Minister to send to Mr Cohen is ... attached. Also attached for information is a summary of the Alvey Report.

4 I am copying this to Brian Unwin (Cabinet Office).

Yours sincerely
David Saunders

DAVID SAUNDERS
Private Secretary

Encls

Education: New Blood

11/12

DRAFT LETTER FOR SIGNATURE OF PRIME MINISTER

I Cohen Esq
Information Technology Advisory Panel
c/o B Unwin Esq
IT Secretariat
Cabinet Office
70 Whitehall
LONDON
SW1

Thank you for your letter of 13 January about the Alvey report on behalf of the IT advisers. I am grateful for your views on this report.

As you know, the report was submitted to the Department of Industry in September 1982. The Department has since been consulting the IT industry over the Alvey proposals to establish the extent to which industry supports the Alvey recommendations and its willingness to partipate in a collaborative programme. These consultations are now complete. We are aiming to announce a decision on Alvey soon. Meanwhile as you will know Sir Keith Joseph has recently announced provision of £100m to increase the supply of those with qualifications relevant to IT, in line with Alvey's recommendations on manpower.

Thank you for your offer to assist in expediting the main Alvey recommendations. I am sure that the IT Advisors could provide valuable advice to those managing a programme on the lines proposed in the report if we decide to go ahead with it.

PRIME MINISTER

2

Academic Tenure

You commented on the attached letter from the Department of Education and Science that you thought the decision not to make the "new blood" appointments either specifically non-tenure posts or limited term posts was a mistake. I am afraid however that in his Parliamentary Answer announcing the new posts, Sir Keith had said that "the posts will be normal university appointments" without a special or new form of contract. In these circumstances he is committed to the arrangements set out in the DES letter of 11 January.

In these circumstances do you agree that I should indicate:

(i) that Sir Keith should make clear to the universities and UGC the Government's preference that the "new blood" posts should be without tenure; and

(ii) you will wish to return to the question of tenure (and limited term posts) when there is more evidence of how the universities are reacting to the Committee of Vice Chancellors and Principals' proposals on tenure.

Dr. Nicholson and DES tell me that most of the universities whose statutes permit them to offer non-tenure posts are likely to do so for the "new blood" posts.

Dr. Nicholson agrees with the strategy outlined above.

TF

17 January 1983

10 DOWNING STREET

From the Private Secretary

14 January, 1983

The Prime Minister has received the attached letter from her panel of Information Technology advisers about future strategy for IT research. I should be grateful if you could arrange for the panel's proposals to be considered and a draft reply submitted for the Prime Minister's consideration by 28 January. I am sending a copy of this to Brian Unwin (Cabinet Office).

TIMOTHY FLESHER

Dr. David Saunders,
Department of Industry

10 DOWNING STREET

From the Private Secretary

14 January, 1983

The Prime Minister has asked me to thank you for your letter of 13 January.

This is receiving attention, and a reply will be sent to you as soon as possible.

TIMOTHY FLESHER

I. Cohen, Esq.

Information Technology Advisory Panel
c/o B Unwin Esq
IT Secretariat
Cabinet Office
70 Whitehall
London SW1

x 14

13 January 1983

The Right Honourable Margaret Thatcher MP
Prime Minister
10 Downing Street
London SW1

Dear Mrs Thatcher

May we please, as your panel of Information Technology advisers, raise a further subject with you.

We are giving our attention to the formulation of a national strategy for Information Technology for we are convinced that the national interest urgently needs the formulation, publication and vigorous implementation of such a strategy to co-ordinate the policies being pursued in regard to this technology in Government, in Industry and Commerce and in Academia.

One important part, but we would stress only one part, of such a strategy is a national strategy for IT research and development. We think that any successful R&D plan for the late 1980s and for the 1990s must involve selective government investment coupled with industrial investment and commitment aimed at clear tangible objectives and managed so as to achieve maximum benefit from co-ordination and efficient resource utilisation. We are firmly convinced that unless the government assumes a strategic planning and intervention role high-risk projects and long-term return projects in Information Technology will not be undertaken and our national resources will be dissipated on fragmented activities. We have studied the report produced by the Alvey Committee earlier this year on the subject and we recently attended, with a number of your Ministers, a presentation of their findings by John Alvey and his committee colleagues.

The Alvey report concentrates on the four most critical areas of technological research for Information Technology. We agree with their selection and emphasis - if anything we believe that the report understates their importance for the development of UK IT industries.

We strongly endorse the Committee's recommendations which bring together into a coherent whole the R&D funded by government and that funded by industry irrespective of whether it is actually carried out in government or industrial laboratories or in academia. We particularly approve of their strong emphasis on the development of UK software capability in all

of its uses noting particularly the importance of its development in computer aided design and the development of Intelligent Knowledge-Based Systems. The UK IT community as a whole shares these views, a fact which we believe should weigh heavily in the Government's assessment of these proposals.

It is, in our view, vital to achieve close gearing of R&D activities to the production of wealth-creating products and services aimed at international markets, and not merely to indulge in scientific research. In particular, it is vital to devise technology transfer mechanisms and projects which take close account of IT Users' needs and reactions. We, therefore, heartily endorse the Alvey proposal heavily to involve Users in the R&D activities.

We also share the Alvey Committee views that it will only be possible to implement this co-ordinated plan if an effective Directorate is created for that purpose, and that an effective Directorate must be one of an industrial management rather than a Civil Service character which has the authority and scope for significant and rapid decision taking. This we believe will be the key to success.

There is much to be done to decide upon the detailed content of the research areas proposed and to set up the necessary implementation mechanisms. But clearly the first steps are for your Government to approve the policy, sanction the expenditure and set up the Directorate.

This technology as you will know is fast moving and no time should be lost in decision taking if our national interest is to be secured. The French and Japanese Governments clearly recognise this and are acting accordingly. John Alvey reported in the summer and it is a matter of some concern to us that we are entering the New Year with no signs of action or reaction. Is there anything which we can do to assist in expediting this matter? We would gladly do so.

Yours sincerely

M ALDRICH D HARTLEY
I COHEN C READ
A DAVIES C SOUTHGATE

Signed on behalf of all ITAP members

(I Cohen)

NB Charles Read wishes to declare his interest in the outcome of the Alvey Report. He served as a member of the Alvey Committee.

Copy to: Mr B Unwin
IT Secretariat
Cabinet Office

ct 4

Education
cc FM

DEPARTMENT OF EDUCATION AND SCIENCE

ELIZABETH HOUSE, YORK ROAD, LONDON SE1 7PH

TELEPHONE 01-928 9222

FROM THE SECRETARY OF STATE

11/1

Dr R B Nicholson
Chief Scientist
Central Policy Review Staff
Cabinet Office
70 Whitehall
LONDON SW1A 2AS

11 January 1983

Dear Dr Nicholson.

Thank you for your letter of 17 December about the terms of appointment to be attached to the new blood posts. In my announcement last month about the new blood scheme I described the posts as "normal university appointments" to distinguish them from research type appointments for a fixed period of years, but the UGC's letter of invitation to bid for them will emphasise that they will be on the same terms as apply to other new academic appointments. The expectation here is that universities will not be making new appointments with tenure or without provision for redundancy unless, exceptionally, this is precluded by their charter or statutes. The letter will also remind universities of my view that, while universities are considering the proposals of the Committee of Vice-Chancellors and Principals for the structure of the academic profession, any new appointments should be made as far as possible on terms consistent with the long-term arrangements they propose to adopt. I am not inclined to go further than this and specifically impose a "no tenure" condition on these appointments because it is important for the success of the exercise that they should be seen as part of the academic mainstream. But we can if necessary return to this question in the course of the year when I have a better idea of how universities are reacting to the Committee of Vice-Chancellors and Principals' proposals on tenure. You may like to know that we do intend to insist that there must be a redundancy provision for academic appointments in the various proposals for new charters and statutes we shall be considering in the near future.

I am copying this letter to the Prime Minister, Geoffrey Howe, Michael Heseltine, Patrick Jenkin, George Younger, Nicholas Edwards, Kenneth Baker and Sir Robert Armstrong.

Yours sincerely, Keith Joseph.

Enclosure 1 of 2

DEPARTMENT OF INDUSTRY
ASHDOWN HOUSE
123 VICTORIA STREET
LONDON SW1E 6RB
TELEPHONE DIRECT LINE 01-212 3301
SWITCHBOARD 01-212 7676

JF2353
Secretary of State for Industry

5 January 1983

The Rt Hon Nicholas Edwards MP
Secretary of State for Wales
Welsh Office Gwydyr House
Whitehall
LONDON
SW1A 2ER

Dear Nick,

Thank you for your letter of 15 December.

2 I was very pleased to hear of the initiative you were taking to increase places on IT courses in the public sector in Wales. This is very welcome. I agree that it is important for us to keep in touch on developments in this area. You will by now have seen my letter of 13 December to Keith Joseph suggesting a meeting early in the New Year.

3 I am sending a copy of this to recipients of the earlier correspondence.

Yours ever

Patrick

Education Nov 82,
New Blood For Research.

extract
S/S DES to S/SOHSS
30/11

These proposals would accommodate the recommendations of the Alvey report but go well beyond it, of course, in providing additional qualified manpower for all related functions not just research. I would only note here that the balance of the AFE programme is under detailed consideration by the NAB; and that the UGC and the ABRC will be considering the details of the proposals as they may affect universities and the Research Councils. We shall of course need to take stock and review progress with these bodies as the programme proceeds, in the light of experience.

These dispositions are made at some detriment to other parts of education and at the cost of some hurtful and contentious redeployment within the Science Budget because of the high importance placed on Information Technology and the potential benefits for the economy foreseen by your Department. There must be limits to such a redirection of effort, in the longer term interest of maintaining basic research capacity; but there is real willingness to respond.

Our hope and expectation is, naturally, that our push will be matched by your pull; and that your Department's lead with industry will create the demands for manpower and knowledge on which my programme is postulated. I should be grateful if you could let us know soon your plans and future provision for Information Technology, both on the Alvey recommendations and more widely. I need to announce my programmes soon and start planning to implement them as soon as possible if there is to be any hope of reaching the intended figures. The way is pretty well clear on new blood but on Information Technolog I think it would be right for us to move in step if possible. The way I present our plans could of course be materially affected by your response to Alvey. You may think it would be useful to meet for some discussion. We should welcome a general exchange, not just on the basic research and educational aspects.

I am aware of the Prime Minister's forthcoming speech on 8 December and should be willing for her to use such of the above material as she chooses. My own inclination - given the nature of the occasion and the likelihood that decisions on Alvey will still be outstanding - would be to offer a fairly short passage, with a more detailed announcement later on. Officials here will be working on this.

I am sending copies of this to the Prime Minister, Geoffrey Howe, John Nott, George Younger and Nicholas Edwards (and Kenneth Baker in view of his letter of 9 November to William Waldegrave); also to Robert Armstrong and Robin Nicholson.

Yours,

Ken

Educatn
WSb

rce JV

DEPARTMENT OF EDUCATION AND SCIENCE

ELIZABETH HOUSE, YORK ROAD, LONDON SE1 7PH

TELEPHONE 01-928 9222

FROM THE SECRETARY OF STATE

27/12

The Rt Hon Patrick Jenkin MP
Secretary of State
Dept of Industry
Ashdown House
Victoria SW1

23 December 1982

Dear Patrick.

INFORMATION TECHNOLOGY: ALVEY

Thank you for your letter of 13 December. I am glad to have been able to strengthen our shared position on information technology.

I understand that you are not quite ready to talk about Alvey. Although my programmes would allow us to say that we have met the Alvey recommendations, I would want to avoid such an assertion until your position is clearer. I believe that Defence also stand ready to back their part of the Alvey action. Obviously the three of us must act as far as possible in concert; it is, after all, our collective resources that would provide the Government part of the Alvey programme.

If such a programme comes about the guidance and commitment required of industry will be of paramount importance. We should need to be quite certain that the Directorate was constituted and positioned accordingly. Bill Shelton and I would like to see it put as near industry as possible. Obviously we cannot claim expertise in these matters but - given our interest (through SERC) - we should ~~should~~ like to know your thinking on this. I hope therefore that we can have a talk soon, before decisions become imminent.

I am copying this letter to those who have seen our earlier exchanges, and to Geoffrey Pattie.

Yours ever,
Keith

New Blood
DES to

educ Nov 82 New Blood
for Research

FILE

RM
Education

10 DOWNING STREET

From the Private Secretary

20 December, 1982

The Prime Minister has seen a copy of Dr Nicholson's letter to your Secretary of State of 17 December about new blood for research. She was under the impression that we had reached an arrangement with the universities that there should be no new "tenure" posts. I should be grateful, therefore, if you could arrange that in considering Dr Nicholson's letter for the Prime Minister's point to be taken into account and for a note setting out the position to be prepared.

Pt 11

I am sending a copy of this letter to Dr Nicholson.

(Timothy Flesher)

Mrs I Wilde,
Department of Education and Science

CC JV

2

CABINET OFFICE
Central Policy Review Staff
70 Whitehall, London SW1A 2AS Telephone 01-233 7089

I thought we had agreed that we should be no new 'tenure' posts?

W.0786

17 December 1982

The Rt Hon Sir Keith Joseph MP
Secretary of State
Department of Education and Science
Elizabeth House Y
York Road
London N1

Dear Secretary of State,

NEW BLOOD FOR RESEARCH

I read with interest your letter of 30 November to the Secretary of State for Industry. The need to sustain and enhance the quality of science and engineering research in our universities has never been more important. If we are to produce the new ideas and stimulate the new industries which are needed to regenerate the country's economy, we cannot afford to have university research blunted by the loss of the normal stimulus of new blood.

One of the problems for universities in implementing the UGC allocations made in 1981 has been their inflexibility in retraining/hiring/losing the appropriate staff for their future needs. The tenure system means that universities can simply not respond in the way a business can to changes in demand for teaching and research. The system greatly hinders any rational response to the market.

It is therefore a pity that the new blood posts will be 'normal lecturer posts', when they might have been used to start a new era for our universities if they were subject to normal rather than extraordinary conditions of employment. Typical industrial terms of 3/6 months' notice on reasonable

grounds would surely be no deterrent to the excellent young people whom you expect to attract to the new posts. I am sure that the more enlightened Vice-Chancellors and Principals would (at least privately) welcome such a move as being extremely supportive of the long-term best interests of their Institutions.

I appreciate that the urgency in getting the scheme off the ground may have precluded the possibility of a revision of terms of employment this year but I hope that the sort of change I have outlined above can be considered for the remaining years of the scheme.

Copies of this letter go to recipients of yours.

Yours sincerely,

Robin Nicholson

ROBIN B NICHOLSON
Chief Scientist

Education Nov 82
New Blood for Research

Y SWYDDFA GYMREIG
GWYDYR HOUSE
WHITEHALL LONDON SW1A 2ER
Tel. 01-233 3000 (Switsfwrdd)
01-233 6106 (Llinell Union)
Oddi wrth Ysgrifennydd Gwladol Cymru

WELSH OFFICE
GWYDYR HOUSE
WHITEHALL LONDON SW1A 2ER
Tel. 01-233 3000 (Switchboard)
01-233 6106 (Direct Line)
From The Secretary of State for Wales

The Rt Hon Nicholas Edwards MP

15 December 1982

Dear Patrick

NEW BLOOD FOR RESEARCH: INFORMATION TECHNOLOGY

I have seen Keith's letter to you of 30 November in which he described initiatives which his Department is taking in promoting research posts in the natural sciences and technologies in the universities and in supporting developments in information technology in higher education generally.

While funding of the university in Wales is Keith's responsibility, I have also set aside in 1983/84 £0.1million towards new provision in advanced further education in the public sector and am asking the Wales Advisory Body for Local Authority Higher Education to advise quickly as how this might best be spent. I have planned similar expenditure in non-advanced further education.

I would be grateful if you would keep me in touch with any further exchanges which you may have on this important area of work.

I am sending copies of this to those to whom Keith's letter was copied.

Nick

Rt Hon Patrick Jenkin MP
Secretary of State for Industry
Department of Industry
Ashdown House
123 Victoria Street
LONDON SW1E 6RB

PT

010

2

Prime Minister

14/12

DEPARTMENT OF EDUCATION AND SCIENCE

ELIZABETH HOUSE, YORK ROAD, LONDON SE1 7PH

TELEPHONE 01-928 9222

FROM THE SECRETARY OF STATE

Jonathan Spencer Esq
Private Secretary to the Secretary
of State for Industry
Ashdown House
123 Victoria Street
LONDON SW1E 6RB

14 December 1982

Dear Jonathan,

NEW BLOOD FOR RESEARCH AND INFORMATION TECHNOLOGY

My Secretary of State has seen your Secretary of State's letter of 13 December and looks forward to having a discussion with him in the New Year on Alvey and on industry's needs for qualified manpower.

Meanwhile my Secretary of State is now ready to make an announcement on his programme for new blood and information technology. He proposes to make a statement by means of a Written Answer on Thursday 16 December. I enclose a copy of the draft statement and should be grateful for any comments by close of play on Wednesday 15th.

I am sending copies of this letter and enclosure to the Private Secretaries to the Prime Minister, the Chancellor of the Exchequer, the Secretaries of State for Defence, Scotland and Wales, the Leader of the House and the Minister of State for Industry and Information Technology.

Yours sincerely,

Imogen Wilde

MRS I WILDE
Private Secretary

Q. To ask the Secretary of State for Education and Science if he will make a further statement about the programme of recruitment by the Universities of additional young researchers and lecturers and about additional provision for information technology, to which he referred in his statement on 8 November.

SIR KEITH JOSEPH

Yes, Sir. This answer covers two separate but related initiatives - "new blood" on the one hand and information technology on the other.

Both the University Grants Committee and the Advisory Board for the Research Councils have represented to me the need to maintain a flow of new blood into the universities, particularly in the field of scientific research. I am glad to announce that I have been able to make available to the UGC about £4m extra recurrent grant for the 1983-84 academic year which will enable the universities to recruit some additional 230 lecturers. It is expected that 200 will be recruited in the natural sciences and technology and about 30 in the arts. The extra grant will include a contribution for research costs and overheads.

The posts will be normal university appointments. But, since I am particularly concerned about maintaining the vitality of research in universities, the Research Councils and the UGC will in consultation decide the location of the science and technology lectureships. Although the additional lecturers will have teaching duties, their primary role in the early years will be to contribute to research. The UGC will announce further details soon.

I expect, subject to the annual review of public expenditure, to provide grant in 1984-85 and 1985-86 to allow further recruitment in each of those years of about the same numbers as in 1983-84.

In recognition of the likely increase in demand for research grants consequent on these appointments the allocations from the Science Vote to the natural science Research Councils have been augmented in the 1983-84 financial year by a total of £2.5m and will be augmented by a similar sum in 1984-85. This money will not be tied to the new appointments, but will be subject to competitive application in the normal way.

/As well as the new blood

As well as the new blood programme, and in accordance with the Government's policy of enhancing the strength of UK industry and commerce in information technology and of encouraging the wider application and acceptance of the new technology, I am making additional provision, beginning in 1983-84, for expansion of research and of the training of qualified manpower in fields relating to information technology.

I accept the advice of the Advisory Board for the Research Councils that within the Science Vote high priority should be given to information technology; and that the Science and Engineering Research Council should devote an additional £5m in 1983-84 for research in this field, partly by redeployment within the Science Vote and partly by additional provision. I have therefore augmented their 1983-84 allocation accordingly; and, subject to the annual review of public expenditure, intend to provide further funds for this purpose in the two following years on the lines indicated by the Board.

Additional places will be made available in universities and polytechnics at all levels - postgraduate and post-experience, first degree and higher diploma and certificate courses - in disciplines related to information technology. In 1983-84 I am making provision for the support of some 600 more postgraduate and post-experience university students, mainly on one year advanced courses (including conversion courses) but also for three year research training; and upwards of 400 more in the polytechnics, again mainly on one year courses including conversion. The awards, which will cover both maintenance and fees in the normal way, will be administered by the Science and Engineering Research Council.

On first degree, higher diploma and higher certificate courses there will be an additional /~ 1,100 ~/ places in 1983-84.

Extra grant will be given to the University Grants Committee for some 70 extra posts in the universities in 1983-84, in addition to those already described for new blood: and to the SERC for about 45 Research Fellowships. The location of the university posts will be decided by the UGC in consultation with the SERC. Provision is also included for a comparable /~ or possibly greater ~/ number of teaching posts as necessary in the polytechnics and other maintained colleges. As I announced in my statement of 8 November, an additional £2m is being made available in non-advanced

/further education

further education in 1983-84 to strengthen the training of technicians and related staff in information technology.

It is my intention, subject to the annual review of public expenditure, that these programmes should increase in the following two years to secure, in 1985-86, some 2,000 extra postgraduate and post-experience students with a similar expansion at lower levels, some 400 additional staff in universities and polytechnics, and a trebling of Research Fellowships.

More details of the programme will be announced soon by the UGC and the SERC. In the local authority sector, the allocation of the Advanced Further Education Pool for 1983-84, details of which I shall announce shortly, will reflect the advice of the National Advisory Body to whom I am indebted for their swift help on the distribution of the additional provision and the associated resources in their sector.

The cost of the new blood measures will be some £4.8m in the financial year 1983-84, to be met from the additional £10m to which I referred in my statement of 8 November. The balance will be applied towards the cost of the measures in information technology, augmented by the £4m for advanced and non-advanced further education referred to in my earlier statement and by £4m from the Science Vote for research. Thus the total additional expenditure in the financial year 1983-84 to promote information technology by measures within my sphere of responsibility will be just over £13m. The two initiatives together - new blood and information technology - will be receiving therefore an extra £18m for 1983-84.

DEPARTMENT OF INDUSTRY
ASHDOWN HOUSE
123 VICTORIA STREET
LONDON SW1E 6RB

Telephone *Direct Line* 01-212 3301
Switchboard 01-212 7676

JF2206
Secretary of State for Industry

13 December 1982

The Rt Hon Sir Keith Joseph Bt MP
Secretary of State
Department of Education and Science
Elizabeth House
York Road
LONDON
SE1 7PH

Dear Keith,

NEW BLOOD FOR RESEARCH : AND INFORMATION TECHNOLOGY

Thank you for your letter of 30 November and for letting me have details of the additional posts and places in Information Technology which you are planning over the three years.

2 I very much welcome the commitment you are making both in enabling the SERC to implement the full programme of research recommended by Alvey and in providing for additional qualified manpower more widely. Kenneth Baker and I have been concerned particularly about undergraduate places. I understand that the figures set out in your letter include provision for an extra intake of 300 undergraduates to read IT related subjects in the Universities in each of the three years and a roughly similar number, although with some element of growth, in Polytechnics and AFE colleges. At the University level this should take the undergraduate intake back to the trend which was emerging in 1979, 1980 and 1981. Taken together with the one-year conversion courses, which I agree are a good way of producing more people quickly, this is very welcome.

3 I also agree we should keep in step in our actions and announcements in this area. I am hoping to be able to make a definite response to Alvey in the New Year. Our first task has been to consult industry about their response to these proposals. This has been very encouraging so far and the firms we have consulted seem ready to participate in an Alvey type programme. But it will take a few weeks before the details of a workable programme can be agreed and before I can say how far we shall be implementing Alvey. Whatever the outcome on this front, there is still a very strong industrial need for the manpower and research effort which your additional provision will generate.

4 I would certainly like to have a discussion with you to co-ordinate our approach on Alvey and to continue our broader discussion on the sort of qualified manpower for which industry is looking. But if you agree, I would prefer to wait until next month when my own position on Alvey should be clear. That would also be a sensible time to have a broader discussion since it could follow on the meeting which John MacGregor is to have with a number of your colleagues on industry education matters on 20 December.

5 I am sending copies of this letter to those who received yours.

Yours ever

Patrick

DEPARTMENT OF EDUCATION AND SCIENCE

ELIZABETH HOUSE, YORK ROAD, LONDON SE1 7PH

TELEPHONE 01-928 9222

FROM THE SECRETARY OF STATE

The Rt Hon Patrick Jenkin MP
Secretary of State
Department of Industry
Ashdown House
123 Victoria Street
LONDON SW1E 6RB

30 NOV 1982

Dear Patrick.

NEW BLOOD FOR RESEARCH: AND INFORMATION TECHNOLOGY

I am grateful for the interest that you and Kenneth Baker have been taking in these parts of my programmes and for the support you have given in our public expenditure discussions. You will perhaps have seen my statement of 8 November but will obviously want to know in more detail what I am proposing to do, not least because in certain areas we shall probably need to co-ordinate the actions and announcements of our Departments.

As you know, I attach high priority to maintaining a flow of young researchers and lecturers, particularly in the universities, selectively to strengthen the creative vigour of the best departments. I am accordingly proposing a programme of additional new university posts predominantly in the natural sciences and technologies where I envisage an extra 200 in 1983/84 and - subject to the usual reservations about expenditure decisions in later years - increasing to 440 and 680 in the following two years. These posts will be primarily for research, and the Research Councils and the UGC will collaborate in making allocations to the universities, probably in response to bids; but the money will be channelled through the UGC and the posts will be normal lecturer posts in all other respects.

I am also proposing to give high priority additionally to Information Technology, in response to your Department's view of technological priorities and - particularly in respect of research - to the advice of the SERC and the ABRC.

Taking research first, I am making an allocation to SERC that - in accordance with the ABRC advice, and contingent again on expenditure decisions for later years - will secure the full programme of research grants recommended by Alvey viz £5M for 1983/84, to be followed by £10M and £15M over the next 2 years.

In addition I have it in mind to make provision for the manpower and training needs for IT in its widest sense, both those recommended

by Alvey but also having regard to the needs of industry in functions other than research. Our judgement is that, on balance, in the early years at least the main thrust should be towards postgraduate training and on one and two year higher technician courses (which will produce more people more quickly than 3 year first degree courses), perhaps with increasing emphasis on first degree courses in the mid-1980s as industry creates new jobs in this field.

For Information Technology I have in mind a programme of additional posts and places in universities and AFE for the next three years on these lines:

	1983/84	1984/85	1985/86
i. Postgraduate training			
In the universities: research training and 1 year courses (including conversion)	620	775	950
In the polytechnics: mainly 1 year courses (including conversion)	500	700	1000
ii. First degrees and higher diploma/certificate courses			
Universities and AFE	1130	1975	2700
Totals, extra students	2250	3450	4650
iii. Additional staff posts for disciplines related to IT (in addition to new blood)			
In universities (including Research Fellowships)	115	210	294
In AFE	130	200	270

This programme of expansion will be financed in part through additional Vote expenditure, and in part by identified additions to the institutional provision for polytechnics and other AFE establishments, starting with £2m in 1983/84. I am also providing additional money in non-advanced further education, beginning with £2m in 1983/84, to strengthen the training of technicians and related staff in IT fields.

These proposals would accommodate the recommendations of the Alvey report but go well beyond it, of course, in providing additional qualified manpower for all related functions not just research. I would only note here that the balance of the AFE programme is under detailed consideration by the NAB; and that the UGC and the ABRC will be considering the details of the proposals as they may affect universities and the Research Councils. We shall of course need to take stock and review progress with these bodies as the programme proceeds, in the light of experience.

These dispositions are made at some detriment to other parts of education and at the cost of some hurtful and contentious redeployment within the Science Budget because of the high importance placed on Information Technology and the potential benefits for the economy foreseen by your Department. There must be limits to such a redirection of effort, in the longer term interest of maintaining basic research capacity; but there is real willingness to respond.

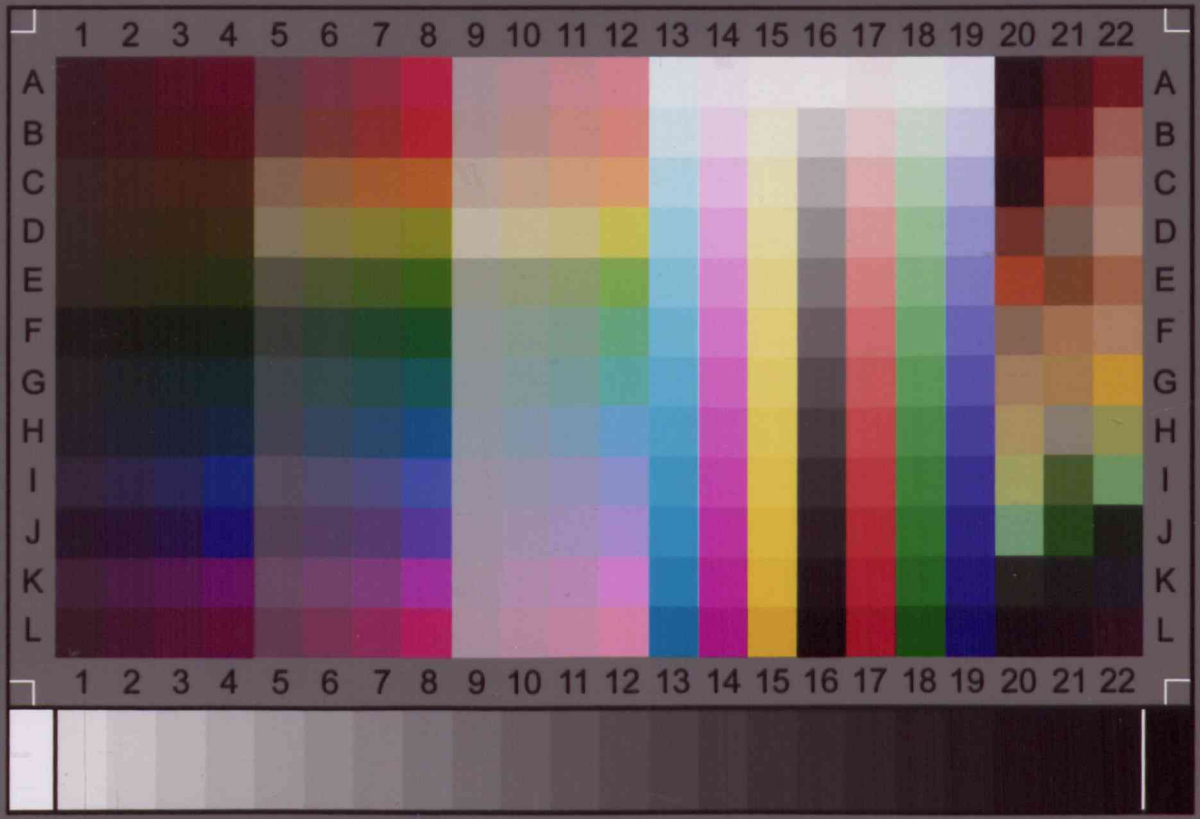
Our hope and expectation is, naturally, that our push will be matched by your pull; and that your Department's lead with industry will create the demands for manpower and knowledge on which my programme is postulated. I should be grateful if you could let us know soon your plans and future provision for Information Technology, both on the Alvey recommendations and more widely. I need to announce my programmes soon and start planning to implement them as soon as possible if there is to be any hope of reaching the intended figures. The way is pretty well clear on new blood but on Information Technology I think it would be right for us to move in step if possible. The way I present our plans could of course be materially affected by your response to Alvey. You may think it would be useful to meet for some discussion. We should welcome a general exchange, not just on the basic research and educational aspects.

I am aware of the Prime Minister's forthcoming speech on 8 December and should be willing for her to use such of the above material as she chooses. My own inclination - given the nature of the occasion, and the likelihood that decisions on Alvey will still be outstanding - would be to offer a fairly short passage, with a more detailed announcement later on. Officials here will be working on this.

I am sending copies of this to the Prime Minister, Geoffrey Howe, John Nott, George Younger and Nicholas Edwards (and Kenneth Baker in view of his letter of 9 November to William Waldegrave); also to Robert Armstrong and Robin Nicholson.

Yours,

Ken



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