

Prime Minister



No - 1 agree that the conclusion is paras 22-29 and that in para 11 about British chairman is an important whole.

Do you wish another meeting of the small group to consider this appraisal?

MUS 10/12

FROM : JOHN WAKEHAM

DATE : 10 December 1982

PRIME MINISTER

INMOS

Following your meeting with Geoffrey Howe, Patrick Jenkin, Nicholas Edwards and Robin Nicholson on 29 November, John Sparrow, Jeffrey Sterling and I met on 30 November and arranged for INMOS to give a presentation on 2 December.

2. We asked the company to concentrate on its prospects and financing requirements over the period 1983 and 1984, since it is in this period that the company's commercial viability should be demonstrated, now that it has launched the two major products on which its business rests. I commissioned three papers following this presentation. They are attached as annexes to this minute:

(a) A financial appraisal of the company with the emphasis on its immediate term financing requirements. This was carried out under Treasury chairmanship;

(b) An appraisal of the company's products and market prospects, incorporating an appraisal of the company's technological competitiveness by the CPRS.

(c) A report from Hill Samuel of their assessment of the company's ability to raise equity finance in 1983 and 1985.

3. You asked for an informed opinion about Hill Samuel's claim that private sector funding would be available in spring 1983 if certain conditions were met. We share their

judgement that private sector money is not available now and we cannot be sure Hill Samuel can raise money next year. This is a high risk venture operating in a very competitive sector at a time of world recession. On balance our judgement is that INMOS has reasonable prospects of success, and that this view will be taken by potential private sector investors.

4. The request to Government is for £15 million additional finance to see INMOS through to the point where its further financing requirements can be met from the market. The question we asked ourselves was whether providing this additional money and thereby seeing INMOS through a crucial stage of its development was the best way of protecting the Government's interest, or whether it would be better to decline to provide more money and see INMOS close.

5. Our view is that given the risks we have already taken and the size of our current investment it would make commercial sense to maintain the business. Putting in £15 million now will enable the Newport facility to be properly established at commercial production levels by the middle of next year. By then the Colorado plant presently breaking even will be generating profits. The company's value will be enhanced by this development, hopefully by at least the £15 million it will take to get the company to this stage.

6. However, we hope that putting in the extra £15 million will do more than simply enhance INMOS's break-up value. The object is to set it up on a viable basis so that it will yield a profit on the Government's original investment when we dispose of it. The appraisals suggest INMOS is a competent company with good products for which there is a growing market. Two reports by outside consultants have recently confirmed that the integrated circuit market has considerable growth potential and that INMOS products should be capable of being fully competitive.

7. I must emphasise that the figuring on which this assessment is based is subject to a range of uncertainties, some customarily attached to market forecasts of this kind while others are peculiar to this particular company. It would not be prudent to ignore these doubts. On the other hand, the financial projections include provision for under-achievement of sales and profit forecasts, so that even if the forecasts are not fully achieved there is a reasonable prospect that the proposed financial package will see the company through.

8. If INMOS is to succeed the next few months will be crucial. During this time the company will be transferring technology from the United States to this country, and the Newport facility will be built up to an economic level of production. The immediate problem is that the company is operating very close to its borrowing limit and needs another £15 million now to accomplish these tasks.

9. Our view is that there is a case for providing £15 million of additional finance to INMOS as soon as possible. The proposition you discussed on 29 November was that this should be in the form of further over-draft facilities, underwritten by the Government. But there may be a case for injecting money in the form of equity through the British Technology Group. The BTG has funds available for this purpose from disposal proceeds so there would be no extra call on public expenditure.

10. There are arguments in favour of both methods which are discussed in paragraphs 24-28. Our conclusion is that the case for equity is the stronger. As the Government will be taking the risk in providing support for the immediate period ahead it should get a return for doing this.

11. If we agreed to provide support through either route I think it would be important to secure the appointment of a new chairman who should be British, to reflect the change

in the balance of the company's activities. Up to now the company has been mainly concerned with product development but the emphasis is shifting towards technology transfer and mass production in the UK. While Dr Petritz - the present Chairman and Chief Executive - has done a good job up to now, I think the changing balance of the company's activities and its increasing UK orientation requires a change. We need someone to supervise more closely the UK end of the business and he must be British. It would also be helpful to have a British Chairman when it came to raising money for the company on the market. It will be for Sir Freddie Wood to find someone to take on this role. Dr Petritz should continue as Chief Executive. Obviously this is a delicate matter and will have to be handled tactfully and I suggest Patrick Jenkin be allowed a little flexibility in the way it is accomplished.

12. The remainder of this note develops the background and reasons for our conclusions and selection of options.

TECHNICAL AND MARKET APPRAISAL

13. The first issue is whether there is a case for continuing to support this company. The technical appraisal supports the conclusion that INMOS' latest sales and profit forecast for 1983 and 1984 have a sound basis in product terms. The main points to consider are:

(a) 90 per cent of projected revenue in 1983 and 80 per cent in 1984 is from sales of proven products;

(b) The current products are at the leading edge of technology and should be able to sustain premium prices;

(c) The advanced production facilities will allow further improvement in the current products over the next two years;

(d) INMOS has achieved the reductions in cost associated with economies derived from the learning process. Its US facility is already covering its manufacturing costs and its learning experience will be applied at Newport as it moves into volume production;

(e) INMOS has substantially achieved its original objectives. Admittedly there has been a one year delay; but this is not unusual in the industry, and its US facility is now operating close to full capacity. Some of the delay arose because INMOS sensibly anticipated competition by making their products more sophisticated, thereby enabling them to secure a firmer niche in the premium end of the market. The delay in our approving the second equity tranche in 1980 also slowed things down;

(f) Potential customers have been identified for 65 per cent of its sales in 1983 and 69 per cent in 1984.

14. These forecasts cannot, of course, be accepted without qualification. A great deal can go wrong, not perhaps so much at the technical stage at this juncture, although hereto unforeseen bugs could still appear, but more in the conditions of world demand and supply for these products. A major uncertainty concerns the timing and speed of US economic recovery, to which semi-conductor sales will be very sensitive. Another uncertainty is the size of their US Defence Department business. INMOS have done very well in securing orders from the Pentagon in so short a time. At the moment they are the single source for some products. However, it is the Pentagon's policy to dual source where possible and so a proportion of these sales are at risk in the future. The company has made a reasonable allowance for this in its forward projections but there is always the risk that it will happen more quickly than they expect.

15. Finally, there is the risk, for which it is extremely difficult to provide a defence, that the company's very success might produce a tough response from its stronger and larger competitors. It could be driven out of business by companies prepared to use their financial muscle by predatory pricing.

FINANCIAL APPRAISAL

16. The financial appraisal based on the company's 1982 Corporate Plan concludes:

(a) the company's immediate problem arises because its borrowing limit is set in sterling but most of its borrowings are in dollars. This was a mistake given the financial circumstances of the company. The effect in this case is different from the effect of sterling depreciation which improves INMOS' revenue because most of its income is received in dollars. However, as most of the company's borrowings are in dollars setting the borrowing limit in sterling has the effect of reducing borrowing capacity when sterling depreciates. The limit was originally set at £35 million on the assumption of a \$2 exchange rate. If it had remained at this level INMOS' total borrowings to date would be £20 million, giving sufficient headroom to get through 1983 until the hoped for equity issue could take place. The £10 million reduction in INMOS' borrowing capacity as a result of sterling's decline is the main cause of its current predicament. As a result INMOS is close to its borrowing limit and without more resources will run out of cash early in the New Year.

(b) But sterling's depreciation is not the only reason why INMOS needs more money. Even if sterling had remained at the parity assumed in INMOS' plan the

company would still need extra finance to build up capacity and train the workforce at Newport and to provide a contingency against risks. But, if sterling had not depreciated, this requirement would have been postponed - possibly until private sector equity could have been organised.

17. In assessing the company's financing requirements over the next 2 years it is prudent to allow for possible shortfalls in the revenue projections - smaller sales than expected, the need to accept lower prices than the company currently anticipate, or unexpected extra costs. The company's own assessment is that if all these risks come together they will add £20 million to cash needs by the end of 1984. This could be exceeded, but it would imply a pretty disastrous situation in the semi-conductor industry, with something like a collapse of the market. For example, if sales in 1983 and 1984 together are 15 per cent below forecast, the loss of revenue over the 2 years would be about £20 million, equivalent to the company's contingency provision. Half of the company's sales are in fairly buoyant sectors of the market and so escape the full effects of recession eg military, personal computers. A sales shortfall of £20 million would reflect a 30 per cent loss of business in the vulnerable end of INMOS' market.

18. Allowing for these risks, and adjusting the financial forecast to reflect the current exchange rate, the maximum requirement would be for an additional £36 million of finance up to the end of 1984 over the above the present £35 million borrowing ceiling. The table summarises the estimates for each year:

INMOS additional Financial Requirements 1983-84 (£m)

	<u>1983</u>	<u>1984</u>	<u>Cumulative</u>
Cash shortfall show in Corporate Plan	5.7	2.8	8.5
Effect of \$1.60 exchange rate	8.4	-	8.4
Allowance for commercial risk	4.3	14.8	19.1
Total Additional Requirement	<u>18.4</u>	<u>17.6</u>	<u>36.0</u>

19. In fact, if events do start going badly INMOS would need to revise its general strategy, including its investment programme, to avoid a cash loss of this size. A detailed contingency plan to identify savings in such circumstances has not been prepared. But we believe that the £10 million planned expenditure at Newport in the first half of 1984, which is designed to expand output to full plant capacity, would be postponed if the company needed to conserve cash. Hence we take the view that a financing programme which envisages the injection of £15 million equity in the next week or so, so as to cover immediate needs, and a further £15 million new equity from private sources in the course of 1983 should be sufficient to finance the company until the end of 1984. By then, and in 1985, the company's Corporate Plan assumes that it will be generating cashflow from operations, on which basis the company should be commercially viable.

HILL SAMUEL ASSESSMENT

20. I find the Hill Samuel assessment of the prospects for an equity issue in 1983 somewhat disappointing, even allowing for the qualifications which a merchant banker will normally place on his judgement about future market prospects. However, our situation differs from that of Hill Samuel and our assessments of risk naturally reflect this. The Government has already put in £85 million and has that much to lose if INMOS closes. Hill Samuel have nothing to lose and must be expected to evaluate the risks from a more cautious viewpoint.

21. Hill Samuel remain confident that equity can be raised in 1983 but warn that this may not be until the summer. They say that a successful equity issue will depend on INMOS having demonstrated the viability of the 64K RAM product and having built up Newport to a reasonable level of production. Hill Samuel believe that the first condition can be met soon but that the second will take a few months. I believe that there are reasonable prospects that Newport will be established at economic production levels early next year, which will permit an equity issue during 1983.

CONCLUSIONS

22. INMOS remains a high risk venture. Its sales and profits forecasts could prove over-optimistic. While we see no reason to doubt that INMOS will be able to bring Newport into economic production reasonably quickly, things could still go wrong.

23. However, despite these risks and uncertainties, we have concluded that it would be wrong to allow INMOS to go out of business now. But if this is to be avoided further Government support is needed, and we believe that this should be provided for the following reasons:

(a) It was always envisaged that the initial R&D would be done in the United States where the technical competence was available, and in due course would be transferred to this country. INMOS has now reached the point where it is in fact transferring technology from the USA to Newport. If we refuse to provide support, the technology will not be transferred, and we will have provided £85 million to finance R&D in the United States. The INMOS operation is commercially attractive enough to be taken over by United States purchasers who will then benefit from the fruits of the research that this country has financed.

(b) Most of the new money would be spent in this country. The United States facility is breaking even, will generate cash next year, and will help finance the company as a whole. Money is needed now to finance the UK operation.

(c) If we withhold further support the company will close. The US facility could probably be sold, to a US or Japanese semi-conductor company, but the custom built Newport factory would be very difficult to sell. The design team would disperse, most likely to the United States. We may recover enough from

break up to pay off all its debts. At the most we may have £10 million left over. This would come to us but would be all that was left of the £50 million equity investment. We would have made a loss of £40m-£50 million on the investment and would lose the technology, developed with this money to the USA. On the other hand if we stay with INMOS its value is likely to be enhanced. We should then reap the benefits of disposal to the private sector. Hill Samuel's assessment is that the company will be worth about £200 million in 1985, at which time full privatisation should be possible.

METHODS OF PROVIDING SUPPORT

24. If we do stay with INMOS what is the best method of providing further support? We could do as the company and the BTG have asked and raise INMOS borrowing ceiling by £15 million to £50 million. This avoids an immediate call on the PSBR, but it would be a contingent liability. Moreover, although the Government would be adding to its exposure, it would have no prospect of receiving any return for assuming these additional risks. The benefits, which would flow from the company being brought up to commercial production, would accrue to the equity holders, including of course the BTG, but also the new equity investors mobilised by Hill Samuel.

25. We prefer the case for providing additional support in the form of equity. This route has two points to recommend it:

(i) If INMOS is given this opportunity to reach viability the Government would share in the benefits. As a consequence the value of the shareholding held by the founders and employees would be diluted.

(ii) But more important, if the company is financed by these means, instead of borrowing, its balance sheet and its credibility would improve and enhance

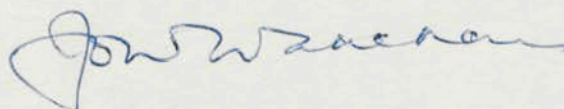
the prospects of a successful equity issue next year, and a successful flotation in due course.

26. Sir Freddie Wood has said publicly that he would be prepared to put more money into INMOS on commercial grounds. The BTG would be able to finance a further equity investment of £15 million out of proceeds already received from the sale of other holdings.

27. If we do decide to provide finance for INMOS by guaranteeing borrowing or providing equity it would be essential to put the sterling value of the ceiling onto a basis where it is not susceptible to future variations in the sterling/dollar exchange rate. Apart from this redefinition the existing ceiling will remain in place.

28. There are presentational difficulties in providing INMOS with any further finance. Ministers are on record as having said that no more support will be provided. Underwriting an increased borrowing limit is a slightly less visible way of providing backing. Direct money from BTG funds is more visible and may attract that much more attention. In fact there is no economic difference between assuming a contingent liability by underwriting loans and providing the money ourselves. But by providing equity we stand to gain a return for our risk and will strengthen the company's balance sheet, and thereby improve the prospects for eventual disposal at a profit.

29. I am sending copies of this minute and the attachments to Patrick Jenkin, Geoffrey Howe, Nicholas Edwards, Leon Brittan, Francis Pym, John Sparrow and Jeffrey Sterling.



JOHN WAKEHAM

IND. POL. INMOS: PIR

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cc: John
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10 DOWNING STREET

From the Private Secretary

13 December 1982

INMOS

The Prime Minister has studied Mr. Wakeham's minute to her of 10 December.

She agrees to the proposals in paragraphs 22 - 28, on the assumption that that in paragraph 11, about a British Chairman, is also agreed and implemented in step with the other decisions.

I am sending copies of this letter to John Kerr (HM Treasury), Adam Peat (Welsh Office), John Gieve (Chief Secretary's Office, HM Treasury), Brian Fall (Foreign and Commonwealth Office), Andrew Hudson (Mr. Wakeham's Office, HM Treasury), John Sparrow (CPRS) and Jeffrey Sterling (Department of Industry).

M. C. SPENCER

Jonathan Spencer, Esq.,
Department of Industry

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INMOS - FINANCIAL APPRAISAL

I Introduction

The BTG has asked the Government to approve a £15m increase in INMOS's existing borrowing limit of £35.3m. The additional money is needed to provide finance to keep the company going until additional equity can be raised from the private sector. Hill Samuel, INMOS's advisers, have said in a letter to the Government that £10m-£15m of private sector equity should be available in spring 1983 provided certain conditions are fulfilled in the meantime.

2. This financial appraisal reflects a presentation made by INMOS management to Mr Wakeham, Mr Sparrow (CPRS) and officials of the Department of Industry and Treasury on the morning of Thursday, 2 December. Officials continued more detailed discussions with the company in the course of the afternoon. Two further papers have been commissioned: a technical appraisal of the company's products and market outlook, prepared by Mr Davies of the CPRS, and a note from Hill Samuel on the prospects for raising private sector equity finance.

3. This paper:

- (a) Describes INMOS's performance to date (Section II);
- (b) Sets out the company's current financial situation (Section III);
- (c) Summarises financial forecasts (Section IV);
- (d) Considers how the company's cash needs arise in 1983 (Section V), 1984 (Section VI) and 1985 to 1987 (Section VII);
- (e) Discusses the prospects for future private sector equity participation (Section VIII);
- (f) Outlines the type of financing package that Hill Samuel say would be necessary to establish INMOS on a sound financial footing (Section IX).

II INMOS: Performance to Date

4. INMOS was established in 1978 with £25m of equity provided by the NEB. A further £25m followed in 1980. The company has also available £7m of RDGs and selective assistance grants. Borrowing facilities up to a ceiling of £35m are backed by a comfort letter from the BTG. These represent a contingent liability for HMG.

5. So far INMOS has spent £84m of these facilities as follows:

Table 1 Inmos Expenditure 1978-1982 (£M)

	<u>USA</u>	<u>Bristol</u>	<u>Newport</u>	<u>Total</u>
Fixed Assets	29	2.5	18.5	50
R & D	10	2.5	-	12.5
Working Capital & other Losses	<u>17.5</u>	<u>1.5</u>	<u>2.5</u>	<u>21.5</u>
Total	<u>56.5</u>	<u>6.5</u>	<u>21.0</u>	<u>84.0</u>

6. Accumulated losses of £39m are expected by the end of 1982. The 1980 plan, which was the basis on which the Government authorised the second equity payment, had forecast £4m of trading profits by 1982 on sales of £45m. In fact the company's latest forecast is for a trading loss of £17m and sales of £14m. The position to date is set out below against the forecasts made in the 1980 Plan.

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TABLE 2. INMOS SALES AND INDUSTRY RESULTS 1978-82 (£m)

	<u>1979</u>	<u>1980</u>	<u>1981</u>		<u>1982</u>	
			<u>1980 Plan</u>	<u>Outturn</u>	<u>1980 Plan</u>	<u>Outturn Forecast</u>
Sales	-	-	9	2	45	(14)
Trading Results*	(2.5)	(8)	(8)	(16)	4	(17)

*Trading Results = Profits (Losses) before interest and tax.

7. INMOS say that the reason for the higher losses in that they slipped a year behind their production schedule. The launch of their second product 64K Dynamic RAM, was delayed to incorporate more sophisticated features to meet intensive competition. The delay in 1980 in approving the second equity tranche and certain production problems also contributed to the revenue slippage. Their latest forecasts, which are discussed in Section IV below predict a trading profit in the fourth quarter of 1983.

8. The effect of the losses has been to erode the company's equity base to an unsatisfactory level. By the year end net equity [original equity less accumulated losses] will be £11m compared with net debt of £31m. The company needs to rebuild its equity base in the near future if it is to survive.

III INMOS: CURRENT FINANCIAL SITUATION

9. INMOS's borrowing limit was set in 1980 at £35.3m in sterling terms. This figure was the maximum anticipated borrowing requirement postulated in the 1980 plan on the assumption of an exchange rate of \$2. The exchange rate currently stands at about \$1.6. Most of INMOS's borrowing is in dollars but its borrowing limit is set in sterling. Hence the fall in the exchange rate has, by increasing the sterling value of dollar borrowing, reduced INMOS's borrowing capacity.

10. There is commercial sense in INMOS borrowing in dollars. At present INMOS has gross dollar borrowings of \$85.1m* which are backed by US assets with a book value of \$61.1m. In addition more than 80 per cent of INMOS's revenue is in dollars. Dollar borrowing reduces the company's exposure to currency fluctuations. However, as noted ^{above} the combination of dollar borrowings and a borrowing limit set in sterling reduces borrowing headroom if sterling depreciates. The table below sets out INMOS's projected net borrowings at the end of 1982 on present forecasts but with varying exchange rate assumptions:

TABLE 3. INMOS NET BORROWING DECEMBER 1982

<u>Exchange Rate (\$ - £)</u>	<u>Expected Net Borrowing (£m)</u>
2	20.2
1.85 ('82 Corp. Plan assumption)	23.7
1.7	27.8
1.6	31.0
1.5	34.5

*The \$35.3m borrowing limit applies to net debt after deducting cash. INMOS has borrowing facilities of over \$90m of which \$45.5m are "back to back" loans from banks. The banks require INMOS to deposit sterling to cover, at current exchange rates, their drawings on the dollar back to back facilities. At present INMOS has dollar borrowing equivalent to about \$53m, offset by sterling deposits of about £37m. In addition INMOS has sterling debt of about £17m, giving net borrowing of £31m.

11. The table shows that if the exchange rate remains at $\text{£}1.6$ for the rest of the year INMOS will have net borrowings of $\text{£}3\text{lm}$, leaving $\text{£}4.3\text{m}$ within the approved limit. A further fall would reduce their headroom still further.

12. As a consequence of the current tight position INMOS have had to curtail their plans to bring their Newport facility into full production, and have suspended recruitment. The current level of production is not economic, but Newport has sufficient physical facilities to move to a viable level of production by the end of 1983. The company's case for an increase in their borrowing limit is that additional money is needed now to enable it to bring the Newport facility into volume production.

IV SUMMARY OF INMOS FINANCIAL FORECASTS

13. Financial forecasts for INMOS for the years 1983 to 1987 are set out at Annex A. These are summarised in the table below, together with the current forecast for 1982.

Table 4 INMOS: FINANCIAL FORECASTS

	years ending 31 December				
	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>
	£m	£m	£m	£m	£m
Sales	14.5	42.5	95.5	141.0	182.0
Gross profit/(loss)	(5.7)	11.7	44.0	66.3	87.4
Research & development	4.5	5.5	8.1	12.7	16.4
Marketing/admin.	5.8	8.4	14.6	22.6	29.1
Operating profit/(loss)	(16.0)	(2.2)	21.3	31.0	41.9
	=====	=====	=====	=====	=====
As a % of sales:					
Gross profit/(loss)	(39)	28	46	47	48
R&D	31	13	8	9	9
Marketing/admin.	40	20	15	16	16
Operating profit/(loss)	(110)	(5)	22	22	23
	=====	=====	=====	=====	=====

14. The forecasts shown above are derived from the INMOS Long Range Plan 1982. These forecasts represent INMOS latest view of their future profit and loss performance. Forecasts for 1983 and 1984 have necessarily been prepared with a higher degree of confidence than those for later years. In contrast to the effect of the exchange rate on INMOS borrowing capacity the recent fall of the pound increases sterling value of sales and improves the competitiveness of Newport. The forecast reflect a dollar/sterling exchange rate of $\$1.85$ to $\pounds 1$, and cost inflation at an annual rate of 10 per cent. Funding requirements, the need for further equity and the effects of the exchange rate being maintained at current levels are considered in the following sections of this paper.

15. The most important factor in the forecasts is whether INMOS can achieve its sales forecasts. Sales forecasts by product facility are set out at Annex B. In 1983 and 1984 two product facilities, the 16K static RAM and the 64K dynamic RAM account for over 90 per cent and over 80 per cent of sales respectively. These products are commercially proven; production of the 16K has started at Newport and the transfer of the 64K from US is proceeding smoothly.

16. An analysis of INMOS sales forecast for 1983 and 1984 is at Annex C. Quarterly sales forecasts and average prices are shown in the table below.

TABLE 5

INMOS: QUARTERLY SALES FORECASTS

for the years ended 31 December

	<u>1982</u>		<u>1983</u>			<u>1984</u>			
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Sales (£m)	5.4	6.1	8.7	12.2	15.5	18.2	22.0	26.7	23.6
Average price (£)	11.33	5.00	4.61	4.14	3.99	3.77	3.64	3.38	2.93
Average price (\$)	19.26	9.25	8.53	7.66	7.38	6.97	6.73	6.25	5.51
(£/\$1.85)	=====	=====	=====	=====	=====	=====	=====	=====	=====

17. Price competition is an area of particular risk for INMOS. The forecasts show a continuous nominal fall in the price of INMOS products, implying a more significant decline in real terms. This is characteristic of the industry. Average price achieved is influenced not only by competition but also by the mix of product, its performance, specification, and any special features it offers and the mix between distributor and direct customer sales. In the 16K market, unit prices of \$7 to \$9 have been assumed, which represent a significant reduction in average prices obtained in 1982 (\$18 to \$23) reflecting the reduction in costs from volume production and increased competition. This competition is beginning to come from Fujitsu with Hitachi and NEC yet to establish a market position; Intel have failed to enter this market and now buy from INMOS. INMOS has also, as has been previously reported, a dominant position in US military markets where a very high quality product is demanded and high prices can be achieved.

18. The 64K dynamic RAM market is more competitive than the 16K, with a greater number of competitors (the Japanese, Texas Instruments, Motorola and INMOS). This market emerged in 1982 (60 million units worldwide) and is expected to grow very rapidly through to 1986. It is predominantly directed at computer and industrial markets with less emphasis at present towards military sales. In order to minimise competitive pressure INMOS product strategy is directed to the high performance end of the market, where they have already achieved some success, and where the prices command premium prices of up to 40 per cent above average.

19. A further risk relates to sales volumes. INMOS have established a good customer base, and have achieved a measure of success in having their products designed into those of their customers. However the continued recession, particularly in the most important US market, has delayed the growth in demand for electronic equipment. The industry is still uncertain whether

demand overall will increase in 1983, although there is agreement that the 64K market growth will be very rapid (to the order of 200-250 million units). This gives some justification to INMOS argument that their sales achievement will not involve the displacement of other competitors; but overall the continued recession must be a worrying factor.

20. INMOS market share forecasts are around 50 per cent for the 16K family and 25 per cent for the 64K family.

21. Given the high capital intensity and high research and development costs, volume production has a critical effect on the economics of the industry. At Annex D is a table summarising the effects of volume and yield improvement (which is itself related to volume) on the facility at Newport. INMOS estimate that break-even* can be achieved at a production level of around 2500 wafers per week. The US facility has now achieved a break-even level and is moving towards covering the costs of the US research team and overheads early in 1983. Once reasonable production volumes have been achieved, as is the case in the US, cost reduction can be predicted with some confidence, barring unforeseen events such as machine failure or pollution in the clean room area.

22. Emphasis in the foregoing analysis has been towards the market risks rather than towards production and new product risks, as this seems more relevant to the 1983-1984 time frame. INMOS themselves have conducted a detailed statistical risk analysis of the risks discussed above. In the event of some or all of these risks crystallising, achievement of profit forecasts will be materially affected, but INMOS are confident that they have identified the maximum downside risk assuming the exchange rate does not significantly appreciate above \$1.85. On this basis, the maximum downside risk to profit and cashflow is estimated to be £4-£5m in 1983 and £14-£15m in 1984, amounting in total to £20m over the next two years.

*gross profit contribution exceeding manufacturing costs.

23. To summarise, INMOS is without doubt in a high risk, price competitive, industry with volatile market conditions. It must further be recognised that the present capital structure, with its disproportionate imbalance towards debt, is also a competitive disadvantage. Its competitors are almost invariably on a sounder financial footing. Since the Plan was drawn up uncertainty over the volume of the market, particularly in 1983, has increased. Against this, INMOS will benefit from the improved competitiveness deriving from current exchange rates and lower levels of inflation, and better than planned production performance.

SECTION V INMOS: 1983 FINANCING REQUIREMENT

24. As noted in Table 3 above INMOS forecast their December 1982 borrowing level, at a dollar-sterling parity of 1.60, at £31m. On the basis of the parity used in the 1982 Plan (\$1.85 = £1) the level would be £23.7m, some £3.8m less than the original plan figure of £27.5m (See Annex E).

25. The £3.8m underspend is ascribed to the rephasing of expenditure at Newport. As a consequence expenditure in 1983 needs to be higher than planned to bring the company back on course. The spending profile suggests a peak borrowing requirement of £41m in the third quarter of 1983, which would be £5.7m in excess of the current borrowing ceiling.

26. The flow of funds over this period which results in this position is set out in the table below:

TABLE 6

1983 Q1-Q3 funds flow

	£m	£
(based on $\text{¥}1.85 = \text{£}1$)		
<u>Operations</u>		
Loss on operations	(4.8)	
Depreciation	4.9	
Net operations	<u> </u>	0.1
<u>Financing</u>		
Interest	(3.6)	
Grants/other	0.9	
Net financing	<u> </u>	(2.7)
<u>Applications</u>		
Fixed assets	(5.6)	
Working capital	(5.3)	
	<u> </u>	(10.9)
Net cash outflow		(13.5)
1982 underspend	(3.8)	
Year end borrowings (@ $\text{¥}1.85 = \text{£}1$)	(23.7)	
	<u> </u>	(27.5)
Borrowings at end of Q3 1983		(41.0)

£m

(Q1	7.5
(Q2	4.8
(Q3	1.2

27. The Corporate Plan shows therefore, that the borrowing limit will have been breached by £5.7m at the end of Q3 1983. The actual outcome however will be dependent on two factors:

- (a) dollar sterling exchange rate; and
- (b) the impact on profit and loss account of variances on revenue and costs assumed in the Plan.

28. The company's estimate of the maximum increase in the current borrowing ceiling they would need if all these factors worked against them is £18.4m, as set out below:

TABLE 7	£m
Shortfall as shown by Corporate Plan	5.7
Exchange rate at \$1.60 (ie the current rate is maintained)	8.4
Downside risks	<u>4.3</u>
Increase in borrowing over present limit	<u>18.4</u>

(A fall in the dollar-sterling parity to 1.50 would add a further £3.6m to this figure).

SECTION VI INMOS: 1984 FINANCING REQUIREMENTS

29. INMOS is expected to move marginally into profit in 1983 fourth quarter, and to generate profits on a rising scale thereafter. However there is a net cash outflow in the first half of 1984 as a result of the need to increase production capacity at Newport.

30. Cash flows in the first half of 1984 are as follows:

TABLE 8

£m

(Based on \$1.85 = £1)

Cash generated from operations	11.5
Expenditure on fixed assets	(10.2)
Increase in Working Capital	(5.8)
	<hr/>
Net Cash outflow 1984 first half	(4.5)

31. The company's estimate of the increase in the borrowing ceiling they would need to the 1984 peak taking account of the 1983 peak requirements and possible further requirements in 1984 is in the table below:

TABLE 9

£m

(Based on \$1.60 = £1)

1983 peak borrowing in excess of existing limit (as in Table 7)	18.4
1983 Q4 cash inflow	(1.7)
1984 Q1-Q2 cash outflow	4.5
1984 downside risks	14.8
	<hr/>
Increase in borrowing over present limit	36.0

(A \$1.50 = £1 parity would add a further £3-£4m to this figure)

32. Three caveats must be borne in mind when assessing the relevance of this figure of £36m.

- (a) It assumes maximum product downside risk (cumulative £19.1m).
- (b) It assumes no evasive action. For example, INMOS could defer or cancel their Newport expansion programme.
- (c) No equity injection is assumed in these estimates.

SECTION VII INMOS: 1985-7 FINANCIAL REQUIREMENTS

33. The last half of 1984 shows INMOS with positive cash flow funds generated by operations / ^{exceeding} working and fixed capital requirements. The cash surplus is forecast to amount to £6.9m (after allowing for movement on deferred grants).

34. The flow of funds in the longer term is summarised below. Forecast profit and loss accounts and balance sheets are attached at Annexes A and F. The Plan indicates significant net case generation after 1984.

TABLE 10

SUMMARY FUNDS FLOW £m (@ \$1.85 = £1)

	1985	1986	1987
<u>Operations</u>			
Profit before tax	27.6	39.3	56.0
TAX	-	(10.3)	(20.0)
depreciation	7.8	11.5	15.8
deferred grants	(1.4)	(1.4)	(1.4)
Net operations after financing	34.0	39.1	50.4
<u>Applications</u>			
Fixed assets	(29.4)	(29.3)	(45.6)
Working capital	(10.2)	(8.6)	(11.4)
	(39.6)	(37.9)	(57.0)
Net cash in(out) flow	(5.6)	1.2	(6.6)

35. The high levels of working and fixed capital expenditure are based on the commencement of a further UK facility build up in 1985. If the company is on plan at this stage the fact that it is in a net cash outflow situation should not be a problem. It is shown as being extremely profitable and the raising of further external equity capital would be in prospect.

SECTION VIII INMOS: THE EQUITY REQUIREMENT

36. INMOS needs new equity for two reasons. First, without it the company could be technically insolvent in 1983, ie its liabilities will exceed its assets and it will have negative net equity. The banks continue to lend up to its borrowing ceiling because of the BTG's comfort letter, but this is not assured. By the year of 1982 its net equity as shown by the Plan is expected to have fallen to £10.9m. This figure assumes a \$1.85 exchange rate.

Allowing for a \$1.6 exchange rate and the downside risks net equity is forecast to be £2.4m at the end of 1983 Q1 and to have become negative at £0.9m by the middle of the year. New equity is needed to prevent this situation developing.

37. A further need for equity is to provide extra financial resources to see it through the peak in its financial requirements over the next two years. Sections V and VI above have established that a net increase in financial facilities of up to £18.4m is needed to get the company through 1983 and up to £36m to sustain it through 1984. For that reason an increase in borrowing facilities of £15m is not going to be enough.

38. Hill Samuel have argued that they should be able to raise new equity of £10m -- £15m by Spring 1983. The peak borrowing requirement up to the end of Q2 1983 could amount to £48m. Hence the need to increase the borrowing ceiling by £15m.

39. Once this has been raised INMOS will need further financing, which should be in the form of equity, to cover additional financing needs until the company is able to generate cash. Section VI above put the maximum requirement for new facilities to cover the 1984 peak at £36m. This assumed:
(a) the second stage of Newport's expansion in the first half of 1984 goes ahead on schedule (b) maximum downside risk
(c) an exchange rate of \$1.6.

40. It is doubtful whether the first two circumstances would coincide. If trading conditions worsen to such a degree that the £19m downside risk looks likely to arise the company could defer or scale down its plans to expand Newport. This could save about £10m in 1984, leaving a total requirement for new money of £25m.

41. Hence an equity injection of at least £10m and preferably £15m is needed as soon as possible, and by the end of Q2 1983 at the latest. The cash received through the equity issue would be used initially to reduce borrowing, but in time would be employed to finance the company's investment programme.

42. INMOS and Hill Samuel argue that the increase in the borrowing ceiling should be retained beyond the equity issue:

- first, so that the investment programme can be pursued;
- second, to avoid the company having to operate on a knife edge and with the rise of recurrent cash crises.

43. The Hill Samuel plan is that the 1983 issue would be followed in 1985 with a flotation. The money raised in 1983 together with the increase in borrowing facilities would enable INMOS to get into full production with good profit potential. This should enable a flotation in 1985 which would raise new money to finance the 1985-7 requirements and to begin to buy out the BTG.

SECTION IX POSSIBLE PACKAGE

44. Section V shows that on a \$1.6 exchange rate and after a reasonable allowance for downside risk INMOS's likely peak borrowing requirement in 1983 could exceed its current ceiling by up to £18.4m. This peak is expected to be met in the third quarter of the year although this may slip if the company rephases capital expenditure.

45. INMOS therefore, requires additional financial resources of at least £18.4m some time in 1983. However, at least some of this will have to be equity or the company will be technically insolvent at some time in 1983.

46. Hill Samuel claim that £10m-£15m of private sector equity could be raised in the spring of 1983. But to achieve this they suggest the following package:

- (a) An immediate increase in INMOS's borrowing ceiling from £35m to £50m. This would enable the company to meet expected cash outflows in the first half of 1983 and relieve the present extremely tight position. This additional borrowing would be from the banks and would be under-written by the BTG, adding further to the Government's exposure.
- (b) The increase in the borrowing limit should be maintained after the new equity has been raised. This is necessary because £10m-£15m of new equity could be insufficient to finance the expected level of borrowing in 1983-84 over and above the present ceiling.
- (c) Hill Samuel also argue for a way of protecting the company from periodic cash crises arising because of exchange rate fluctuations. Assuming the new

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borrowing ceiling is set in sterling, they propose that it should be insulated from the effects of any exchange rate change from the current \$1.60 level. If this is accepted this means that all dollar borrowing would be converted at \$1.60 for the purpose of calculating the value in sterling of INMOS's use of the permissible borrowing facilities.

J. HALLIGAN (IA)

R. WILLIAMS (AP)

H. SCRIMGEOUR (DOI-IDU)

INMOS INTERNATIONAL
1982 LONG RANGE PLAN
LONG RANGE OUTLOOK
PROFIT AND LOSS

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
SALES	2.1	14.5	42.5	95.5	141.0	182.0	236.0
SALES GROWTH	-	590	193	124	48	30	30
DIRECT MATERIAL	1.5	4.7	9.5	20.5	29.6	40.0	49.6
DIRECT MANUFACTURING COST	7.8	15.5	22.9	32.5	41.7	48.7	60.6
INDIRECT MANUFACTURING COST	2.0	2.4	3.3	4.1	7.0	10.9	14.1
INVENTORY	(.7)	(2.4)	(4.9)	(5.6)	(3.6)	(5.0)	(6.3)
MANUFACTURING COST	10.6	20.2	30.8	51.5	74.7	94.6	118.0
GPM	(8.5)	(5.7)	11.7	44.0	66.3	87.4	118.0
% SALES	-	(39.3)	27.5	46.0	47.0	48.0	50.0
ADMIN EXPENSE	3.1	3.5	4.2	6.4	10.7	13.7	17.8
MARKETING EXPENSE	1.0	2.3	4.2	8.2	11.9	15.4	20.0
RESEARCH AND DEVELOPMENT	3.3	4.5	5.5	8.1	12.7	16.4	21.2
TOTAL EXPENSE	7.4	10.3	13.9	22.7	35.3	45.5	59.0
% SALES	-	71.0	32.7	24.0	25.0	25.0	25.0
OI / (OE)	2.9	(1.7)	(3.7)	(3.8)	(3.4)	(2.6)	(3.0)
% SALES	-	(11.7)	(8.7)	(4.0)	(2.4)	(1.4)	(1.3)
PBT	(13.0)	(17.7)	(5.9)	17.5	27.6	39.3	56.0
% SALES	-	(122.0)	(13.8)	18.3	19.5	21.5	23.7
TAX	-	-	-	-	-	10.3	20.0
PAT	(13.0)	(17.7)	(5.9)	17.5	27.6	29.0	36.0
% SALES	-	(122.0)	(13.8)	18.3	19.5	16.0	15.2
ROA (After Notional Tax)	-	-	-	11.5	12.7	15.2	17.7

LONG RANGE OUTLOOK
SALES BY PRODUCT FAMILY

	<u>1982</u>		<u>1983</u>		<u>1984</u>		<u>1985</u>		<u>1986</u>		<u>1987</u>	
	£	¢	£	¢	£	¢	£	¢	£	¢	£	¢
<u>MEMORY</u>												
- Dynamic	.5	3.5	10.3	24.6	38.3	40.0	44.0	31.2	46.0	25.3	54.2	22.3
- Static	14.0	96.5	28.6	66.8	40.0	41.9	43.0	30.4	43.0	23.6	45.1	19.1
- Non-Volatile	-	-	<u>3.1</u>	<u>7.4</u>	<u>8.4</u>	<u>8.8</u>	<u>36.0</u>	<u>25.7</u>	<u>47.0</u>	<u>26.1</u>	<u>52.4</u>	<u>22.9</u>
Subtotal	14.5	100.0	42.0	98.8	86.7	90.7	123.0	87.3	136.0	75.0	151.7	64.3
<u>LOGIC</u>												
- MPU Components	-	-	-	-	6.8	7.1	11.5	8.2	21.0	11.5	30.3	12.8
- Systems	-	-	.5	1.2	2.0	2.2	6.0	4.3	16.2	9.0	31.0	13.1
- Other	-	-	-	-	-	-	.5	.2	<u>6.5</u>	<u>3.5</u>	<u>15.0</u>	<u>6.3</u>
Subtotal	-	-	.5	1.2	8.8	9.3	18.0	12.7	43.7	24.0	76.3	32.2
<u>NEW BUSINESS</u>									2.0	1.0	8.0	3.5
<u>TOTAL</u>	<u>14.5</u>	<u>100.0</u>	<u>42.5</u>	<u>100.0</u>	<u>95.5</u>	<u>100.0</u>	<u>141.0</u>	<u>100.0</u>	<u>182.0</u>	<u>100.0</u>	<u>236.0</u>	<u>100.0</u>

SUMMARY - Millions

PRODUCT	1983			1984		
	U	\$	ASP	U	\$	ASP
1400	3.5	30.5	8.70	5.5	36.2	6.57
1420	3.1	24.9	7.94	7.0	39.1	5.58
1600	.001	0.07	70.00	0.08	2.0	25.00
1620	.003	0.23	73.00	0.12	2.5	21.00
2600	2.5	17.6	7.05	10.0	52.5	5.25
2601	.004	0.05	12.00	0.3	2.1	7.00
2620	0.3	2.1	7.00	2.8	14.0	5.00
2630	0.1	0.8	8.00	1.0	6.0	6.00
2800	-	-	-	0.03	1.0	33.00
2820	-	-	-	0.01	0.5	50.00
3630	0.09	6.2	69.00	0.8	16.7	21.00
MEMORY TOTAL	9.6	82.5	8.59	27.6	172.6	6.25
Transputer Software	-	1.0	-	-	3.9	-
Hardware	-	-	-	.13	13.4	102.56
TRANSPUTER TOTAL		1.0			17.3	
TOTAL GROSS \$		83.5			190.0	
RESERVE \$		(4.9)			(13.0)	
NET \$		78.6			177.0	
NET £		42.5			95.5	

ANNEX D

INMOS DUFFRYN

INMOS



UNIT COST

WAFER STARTS PER WEEK	500	2800	4200	6300	8400
	£	£	£	£	£
COST PER WAFER OUT	230	87	73	63	59
FINISHED GOODS COST					
PROBE YIELD					
25%	4.35	2.06	1.83	1.59	1.51
35%	3.26	1.61	1.51	1.26	1.21
45%	2.65	1.37	1.23	1.08	1.04
55%	2.26	1.21	1.10	0.98	0.94
65%	1.98	1.10	1.01	0.88	0.86

ANNEX E

Schedule 14

INMOS INTERNATIONAL
1982 LONG RANGE PLAN
12 QUARTER SUMMARIZED BALANCE SHEET (£M)

	1982				1983				1984			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
GROSS FIXED ASSETS	44.8	47.4	49.6	49.3	51.8	53.8	54.9	56.0	62.0	66.2	68.2	70.8
DEPRECIATION	(4.1)	(5.0)	(6.3)	(7.3)	(8.7)	(10.2)	(12.2)	(14.1)	(15.8)	(17.8)	(19.9)	(22.0)
NET FIXED ASSETS	40.7	42.4	43.3	42.0	43.1	43.6	42.7	41.9	46.2	48.4	48.3	48.8
NET CURRENT ASSETS	(.7)	.4	2.2	3.6	5.4	8.0	9.0	9.6	12.8	15.5	16.8	19.3
TOTAL NET ASSETS	40.0	42.8	45.5	45.6	48.5	51.6	51.7	51.5	59.0	63.9	65.1	68.1
<u>FINANCED BY:</u>												
SHARE CAPITAL	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2
RETAINED EARNINGS	(28.4)	(33.2)	(36.5)	(39.2)	(43.3)	(45.5)	(46.6)	(45.1)	(42.7)	(38.5)	(33.1)	(27.6)
NET EQUITY	21.8	17.0	13.7	11.0	6.9	4.7	3.6	5.1	7.5	11.7	17.1	22.6
DEFERRED GRANTS	4.8	6.4	6.5	7.1	7.1	7.2	7.1	6.8	7.9	8.4	9.0	8.6
NET FINANCING (LESS CASH)	13.4	19.4	25.3	27.5	34.5	39.7	41.0	39.6	43.6	43.8	39.0	36.9
TOTAL NET LIABILITY AND EQUITY	40.0	42.8	45.5	45.6	48.5	51.6	51.7	51.5	59.0	63.9	65.1	68.1

INMOS INTERNATIONAL
1982 LONG RANGE PLAN
LONG RANGE OUTLOOK
BALANCE SHEET

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>*1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
FACILITIES	18.3	21.2	21.4	28.0	36.0	37.5	52.5
MANUFACTURING EQUIPMENT	13.9	21.8	27.5	41.2	54.2	78.0	103.6
OTHER EQUIPMENT	5.0	6.4	7.2	8.2	10.0	14.0	19.0
GROSS FIXED ASSETS	37.2	49.4	56.1	77.4	100.2	129.5	175.1
(ACCUMULATED DEPRECIATION)	(3.1)	(7.4)	(14.2)	(22.0)	(29.8)	(41.3)	(57.1)
NET FIXED ASSETS	34.1	42.0	41.9	55.4	70.4	88.2	118
CASH	14.0	3.9	0	25.3	17.5	13.7	7.1
NET CURRENT ASSETS	(1.7)	3.5	9.6	19.4	29.6	38.2	49.6
TOTAL ASSETS	46.4	49.4	51.5	100.1	117.5	140.1	174.7
SHARE CAPITAL	50.2	50.2	50.2	75.2	75.2	75.2	75.2
RETAINED EARNINGS	(21.7)	(39.3)	(45.2)	(27.6)	0	29.0	65.0
NET EQUITY	28.5	10.9	5.0	47.6	75.2	104.2	140.2
DEFERRED GRANTS	2.6	7.1	6.9	8.7	7.3	5.9	4.5
NET DEBT	15.3	31.4	39.6	43.8	35.0	30.0	30.0
EQUITY & LIABILITIES	46.4	49.4	51.5	100.1	117.5	140.1	174.7

*FOR THE LONG RANGE OUTLOOK, IT IS ASSUMED THAT £25M OF ADDITIONAL SHARE CAPITAL IS RAISED IN 1984 AND AN ADDITIONAL FACILITY STARTED

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John Wakeham, Esq., FCA, JP, MP
Minister of State (Revenue)
HM Treasury
Treasury Chambers
Parliament Street
London, SW1

3rd December, 1982

Dear Minister,

INMOS

After the presentation by the company and ourselves on Thursday morning, we have been asked

- (a) to confirm our up to date thinking on the feasibility of a placing of equity by Inmos with institutional investors in the spring of 1983;
- (b) to explain why, if such a placing would be possible next year, it is not feasible now;
- (c) to give the background to our confidence in Inmos's ability to achieve its forecasts;
- (d) to set out the course of action we propose to follow in order to achieve a placing; and
- (e) to outline our advice to the Inmos Board concerning its desire to achieve privatisation as soon as possible.

We have for some time been saying that we thought an equity financing to raise £10-£15 million from institutional investors would be capable of being arranged in the spring of 1983 subject to two important operational criteria being satisfied, namely that,

- (1) Inmos must have demonstrated the commercial viability of its 64K DRAM product; and
- (2) Inmos must have built up a reasonable level of production at Newport.

An overriding condition to the feasibility of any financing is always that the general state of the markets is conducive to new investment being made and it probably should be said in this case that the feasibility of an Inmos placing will be more than usually sensitive to this condition given the complexity of the company and the reliance investors will be placing on the company's forward projections.

/...

John Wakeham, Esq., FCA, JP, MP
HM Treasury

3rd December, 1982

The reason why a placing is not in our judgement feasible now is simply that Inmos has not yet satisfied the two operational criteria. The first criterion is essential because the 64K DRAM represents a major proportion of prospective revenues and the company, in common with some of its competitors, experienced design and process problems in preparing the product for market. At present we believe Inmos is close to demonstrating the commercial viability of the product. The company has made very considerable progress both from a design and process point of view and is achieving sales of the product. The company has made more rapid progress in achieving improved yields than it anticipated even a few months ago and has decided to begin the move of manufacture of the 64K to Newport earlier than previously planned. We are therefore increasingly confident that the first criterion will be satisfied by the spring of 1983.

The second criterion is, in our judgement, of fundamental importance because the Newport facility is intended as the centre for volume production of VLSI components and the design and process technology is being transferred to Newport from Colorado Springs. Institutional investors will wish to have evidence that a successful transfer is capable of taking place. At this stage Newport is manufacturing 16K SRAMS with good results but at a low level of wafer starts; the build up in its production levels has been delayed as a result of the doubt concerning the future financing of the company and we are frankly less confident that this criterion can now be achieved by the spring of 1983. The decision to begin 64K DRAM production at Newport earlier than previously planned will be a positive factor for an institutional placing provided that the transfer from Colorado Springs is successfully achieved but satisfactory yields are only likely to be evident in the early summer of 1983. Investors will be keenly interested in these yields and to that extent fulfilment of the second criterion may be deferred.

As and when the above operational criteria are satisfied, we believe that an institutional placing will become possible because we are confident that at that point Inmos will be able to make financial forecasts which offer the prospect to investors of a sufficient rate of return on their investment to compensate for the risks. The basis for this conviction is as follows:

- (a) We are satisfied, by reference to outside market studies and to technical assessments of the company, that in general terms Inmos is capable of achieving the projections set out in its 1982 long range plan.
- (b) The projected sales in 1983-84 are substantially covered by products which are either already successfully competing in the market place or, in the case of the 64K DRAM, are just entering the market.

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John Wakeham, Esq., FCA, JP, MP
HM Treasury

3rd December, 1982

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- (c) The projected sales in 1983-84 are already reasonably covered by specific product programmes with major computer, graphics and military customers. Although there are no contractual commitments from these customers, and it is not usual in the industry for such commitments to be made, the forecast sales are tied in with the current production schedules which these customers are assuming for their own level of business.
- (d) There is increasing evidence that Inmos can now achieve satisfactory yields which, together with volume, provide the critical determinant for operating costs. Thus the transfer of the 16K SRAM from Colorado Springs to Newport has proceeded according to plan and the improvement in 64K DRAM yields has been sufficiently ahead of forecast to bring about the earlier than planned decision to transfer production to Newport.

At the present time Inmos is working on its 1983 annual plan which will also cover, in less detail, 1984-85. The preparation of this plan is especially difficult given the uncertainty about financial support for the company. The company is also beginning to be concerned that a recovery in the US economy will be slower than we would all hope for and that this will adversely impact their ability to achieve the results envisaged for the first half of 1983 in the long range plan. To that extent we also have to become less confident that the spring of 1983 would be a sensible time to attempt to complete negotiation of a placing. However, the essential point is that we believe the financial forecasts will constitute a basis for an institutional placing and that we will be able to transmit our confidence in them to institutional investors.

Turning now to the course of action we presently propose in order to achieve an institutional placing, the steps we are planning are as follows:

- (1) A preliminary presentation to a select group of institutions which we would expect to be the core investors in a placing. The presentation would be a "preliminary prospectus" containing information on Inmos's strategy, the semiconductor industry, products and competition, manufacturing, sales and marketing, planning and control, directors, management and employees and financial results and projections. The "preliminary prospectus" is currently being prepared. The intention is to provide the chosen institutions with an introduction to Inmos and to correct any false impressions they may have from the poor publicity which the company has had. The timing of first approaches to institutions will depend on resolution of the current situation and completion of the "preliminary prospectus" but could realistically be in January, 1983.

/...

John Wakeham, Esq., FCA, JP, MP
HM Treasury

3rd December, 1982

- (2) A public relations programme aimed at the press, financial analysts and the public at large in order further to improve the climate for negotiation by Inmos of an institutional placing. It is very important that if the Government is prepared to provide further support to Inmos, this is accompanied by strong public statements of this support and encouragement.
- (3) A programme of meetings between institutional investors and Inmos management and of visits to Inmos facilities in order to expand further the familiarity of investors with the company.
- (4) The preparation of a full prospectus on Inmos containing an accountants report by Peat Marwick Mitchell & Co., the auditors of the company, and a technical report by Integrated Circuit Engineering Corp. These reports are also already in preparation and are likely to be completed in March, 1983. The full prospectus will be the document which includes the details of the actual investment proposal to institutions and the then up-to-date financial forecasts of the company, and will constitute the basis for a negotiation of terms with institutions.

It is important to stress that the size of placing we have said will be feasible, that is £10-£15 million, is based on our assessment of the success we could have in the above process with primarily UK institutions at the earliest possible moment for negotiation of any financing. The value of Inmos could rise dramatically in the course of 1983 as it proves it is meeting or exceeding its targets. As Inmos proves it can perform the range of investors prepared to invest will also widen. Both these factors will influence the decision on timing of the placing and its size.

The terms which will prove acceptable to institutions will depend primarily upon their assessment of:

- (a) the likely timing of a public issue and Stock Exchange listing for Inmos; and
- (b) the likely value of Inmos at that time.

Both of these assessments will depend in turn on analysis of Inmos's projections and the probability of their being achieved, with the high debt element in the company's capital structure being perceived as increasing the level of risk attaching to the projections.

The results of this analysis permits the calculation of an expected rate of return which the institutions will compare to returns on other investments open to them.

In coming to our conclusion on the feasibility of an institutional placing, we are carrying out the analysis set out above and anticipating that the expected rate of return from an investment in

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John Wakeham, Esq., FCA, JP, MP
HM Treasury

3rd December, 1982

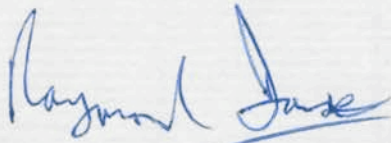
Inmos will be adequate to satisfy sufficient institutions to complete a £10-£15 million placing. Our expectation concerning the likely date for a public issue by Inmos is the spring of 1985 and the middle point of our range of values for the company at that time is £200 million.

Inevitably, however, the negotiation of the terms of the institutional placing depends not only on the willingness of institutions to invest but also on the willingness of the existing shareholders to accept dilution of their shareholding, and this leads us to the final question we were asked to answer.

At this stage we are expecting that the result of a £15 million placing would be to reduce the British Technology Group shareholding in Inmos to a level in the region of 60 per cent. We have, however, proposed to the Board of Inmos that the placing might be accompanied by options granted to the subscribing institutions by BTG over a portion of its existing shareholding. The principal purpose of this proposal is to provide a mechanism for possible reduction of BTG's interest in Inmos to below 50 per cent. without initial cash payments being required.

The Board of Inmos want the privatisation process to take place as soon as possible. At present our best estimate is that the full disposal by BTG of its shareholding would form part of the public issue anticipated for the spring of 1985.

Yours sincerely,



R.A. Douse
Director