



House of Commons
Committee of Public Accounts

**Cambridge–MIT
Institute**

**Thirty–first Report of
Session 2003–04**

*Report, together with formal minutes,
oral and written evidence*

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The Committee of Public Accounts

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Summary

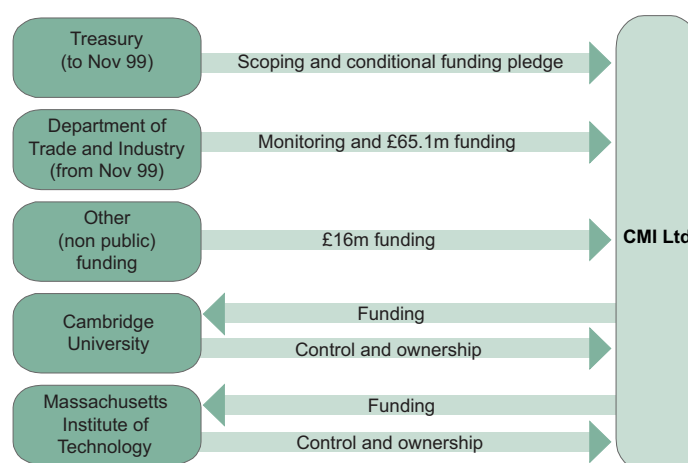
Introduction

Cambridge-MIT Institute (CMI) is a partnership between Cambridge University and the Massachusetts Institute of Technology (MIT), set up in June 2000 as a limited company jointly owned and controlled by the two universities. It aims to enhance the competitiveness, productivity and entrepreneurship of the UK economy by bringing together the expertise of these two leading research universities to undertake collaborative educational and research initiatives. The idea is that innovation is most likely to occur when researchers in leading institutions work collaboratively, exchanging and building on ideas.¹

Cambridge-MIT Institute undertakes a range of diverse activities. Most of the funding it receives from the Government is spent on a variety of work conducted jointly by university researchers and industry on projects to develop commercial products in the fields of science and technology. Other funding is used to encourage enterprise and innovation in the next generation of scientific researchers. Cambridge-MIT Institute's other work includes analysing which type of activity best contributes increased competitiveness, productivity and entrepreneurship.

The Treasury negotiated initially with MIT and then with MIT and Cambridge University. In November 1999 it announced a provisional figure of up to £68 million to fund CMI and handed over responsibility for taking the initiative forward to the Department of Trade and Industry. The relationship between the parties is given at **Figure 1**.²

Figure 1: Overview of the parties involved in CMI



Source: National Audit Office

1 C&AG's Report, *Cambridge-MIT Institute* (HC 362, Session 2003–04), Executive Summary para 1

2 *ibid*, Executive Summary, paras 2, 9, 1.14, 1.21

CMI is an unusual initiative. It was negotiated and set up in an unconventional way.³ Innovation requires a flexible approach, and some of the departures from standard practice made sense. However others—such as the decision by the Treasury not to involve the Department of Trade and Industry at all in the first stage of negotiations—are difficult to justify. CMI also provides important lessons on the time and planning required to set up a ground-breaking initiative, and the risks of setting early expectations too high. The public sector needs to learn the lessons⁴ so that it can build entrepreneurial skills and manage innovation well, to the benefit of the UK economy.

CMI's work is important and has potential for major impacts on the UK economy. CMI has had some early successes in education and knowledge transfer. However, many of its achievements will not be known for some time. Our successors may wish to examine what has been achieved in, say, five years' time, when it should be possible to assess whether CMI is meeting — or exceeding — expectations.

3 C&AG's Report, para 1.12

4 *ibid*, self-assessment questionnaire on p11 and lessons learned on pp 16, 18, 23, 31

Conclusions and recommendations

This Report relates to the Department of Trade and Industry and the Treasury. The need for people working in the public sector to build entrepreneurial skills and manage innovation extends well beyond these two departments, and the following recommendations are relevant to all departments across government.

- 1. In developing innovative initiatives, departments should capitalise on each other's expertise and liaise to ensure good project and risk management.** The public sector needs to embrace innovation and entrepreneurship, while managing the risks effectively. Departments should identify gaps in their expertise and seek help from experienced colleagues in other departments. The Treasury should have informed the Department of Trade and Industry (the lead department for knowledge transfer and exploitation of research) of its proposals for CMI at an earlier stage, enabling the Department to prepare for its later involvement and offer assistance on the early negotiations.
- 2. Standard appraisal processes should be followed or departures from them justified and recorded.** The Treasury expects departments to follow standard project appraisal guidance, but undertook no formal appraisal of CMI. Following all the standard guidance would not have been practical, but the Treasury should have formally considered whether elements could be used without creating undue bureaucracy and with a view to starting to build a business plan and to set realistic expectations for the progress of the initiative.
- 3. Departments should always set objectives — and for experimental projects these should be genuinely indicative, and subject to review and appropriate amendment.** The Treasury and the Department of Trade and Industry accepted the universities' view that specific objectives would have constrained CMI's freedom to experiment and generate new ideas. There was a concern that any objectives would have been immovable once set, rather than tools to help guide and track the initiative, which could be reviewed and amended. For innovative projects, departments should build trust with partners so that indicative objectives can be set as early as possible, and then altered as necessary to keep in step with developments.
- 4. Initiatives that are experimental and have uncertain outcomes require close management and monitoring until their direction and results become clearer.** The Department of Trade and Industry was right to take a 'hands on' approach in its early relationship with CMI, given the absence of clear objectives and measures. However, such an approach needs to give way as soon as practicable to less detailed monitoring based on reporting against agreed objectives and plans.
- 5. Funding profiles and activity plans should reflect realistic spending and delivery expectations.** Many of CMI's early problems stemmed from overoptimistic expectations about the time the initiative would take to set up and start operating. Setting up such initiatives needs to be properly planned, taking account of experience with similar initiatives, and time should be set aside for establishing appropriate governance arrangements and infrastructure.

6. **A mid-term review can be valuable where an initiative has long-term and uncertain outcomes.** On taking up post in January 2003, the current CMI Executive Directors decided to undertake a thorough review of CMI, which led to a detailed new strategy and objectives, and work to ensure that its projects fitted well with the objectives. Departments should consider planning periodic in-depth reviews of initiatives that are not easy to monitor on a routine basis.
7. **CMI has important lessons for appraising, monitoring and evaluating innovative or experimental initiatives.** Departments should draw on best practice to help develop innovation and entrepreneurship projects, including, where applicable, the Office of Government Commerce's Gateway Review and the self-assessment questionnaire in the NAO's Report. The Department of Trade and Industry may, in future, also develop further guidance, based on the CMI experience.

The following recommendations relate specifically to CMI and the Department of Trade and Industry (the Department).

8. **The Department should plan for long-term monitoring and evaluation of CMI's outcomes, including an assessment of the benefits to the UK, and to UK taxpayers.** Some of CMI's very long-term outcomes could yield especially large benefits, and it is important to start planning how they will be assessed. The Department should assign responsibility for monitoring CMI's intellectual property outputs, and promoting their exploitation to maximise the benefits for the UK and for UK taxpayers.
9. **Much of the value of CMI may depend on its key activities being sustained for some time beyond the six-year funding period.** There is currently no guarantee of public funding for CMI after 2006, and the Department and CMI have started to work on the sustainability of specific activities. This work needs to be accorded a high priority to give sufficient time for all available options to be creatively explored and developed.

1 Setting up CMI

The rationale for CMI

1. University/business collaboration is an important current area of UK public policy, and more needs to be done to ensure that business learns to exploit innovative ideas that are being developed in universities. Capacity to turn academic work into commercial, bankable ideas has been a weakness in the UK economy for a long time, and transforming high-risk, innovative ideas into products that eventually benefit the economy is challenging.⁵

2. The Department of Trade and Industry (the Department) has been experimenting with different approaches to bringing universities and business together, of which CMI is one.⁶ CMI is a pioneering way of getting Cambridge University to learn about business/university collaboration from MIT, a university in a unique global position which has been very successful in making a substantial positive impact on the US economy. MIT provides an opportunity to understand the process of stimulating entrepreneurship and to identify what has made the US conducive to commercialising academic projects.⁷

3. The Treasury was aware that Cambridge University was not the only possible partner and it did discuss other institutions with MIT. However, MIT was clear that Cambridge University was its preference and had stipulated that it would want to select the partner institution as one of the three conditions of pursuing the initiative.⁸ As part of its other knowledge transfer programmes, the Department has also awarded Cambridge University £4.8 million, or 2½% of the £184.5 million allocated to these programmes to date.⁹

Role of the Department of Trade and Industry

4. The Treasury had first become aware of the potential for collaboration with MIT through academics with MIT connections working in the UK. It decided to pursue the first-stage negotiations on its own, keeping the number of officials involved to a minimum in order to be able to act quickly, responsively and decisively. Negotiations took longer than expected, and the first stage lasted 14 months. This was partly due to differences in expectations between the negotiating parties. Brinkmanship was a factor — MIT had been considering going outside the UK for the collaboration.¹⁰

5. In the event, the Treasury only notified the Secretary of State for the Department of Trade and Industry about the proposal shortly before an agreement in principle was announced in November 1999. With hindsight, the Department considered that it had not been put at a disadvantage — it had been important to get the high-level commitment in principle at stage one and then to hand over the detailed negotiations. Getting into the

5 C&AG's Report, paras 1.4 -1.5; Qq 65, 67

6 Q 75; C&AG's Report, Figure 13

7 Qq 16, 82-83, 105; C&AG's Report, Figure 5

8 Q 8; C&AG's Report, para 1.7

9 Ev 19; C&AG's Report, Figure 13

10 C&AG's Report, Figure 3, para 1.23; Qq 1, 3, 139

detail at that stage might have put agreement in principle at risk. It had been important to clinch the prize, for the UK, of collaborating with MIT.¹¹

6. It would, however, have been possible to have informed the Department sooner.¹² This might have had substantial benefits:

- The Treasury could have benefited from the extensive experience of the Department's senior officials in negotiating initiatives involving experimental research.
- Officials from the Department could have used the period to build their knowledge of MIT and the nature of the proposed initiative, before they took over responsibility for the negotiations.
- Departmental officials could also have started earlier to build relationships with people in MIT and Cambridge University, and to build realistic expectations for its stage of the negotiations.¹³

How the funding was negotiated

7. The Treasury negotiated the £68 million figure (approximately \$100 million, in line with funding for a comparable venture in Singapore) down from MIT's initial bid of \$200 million. Without a business plan, it was not possible to cost the amount "bottom-up", but MIT was recognised as in a league of its own in terms of impact on the economy.¹⁴

8. The initiative enables the whole of Cambridge University to interact at many points with the ethos of MIT, involving people in both places working on programmes in educational reform and, for example, the next generation in pharmaceuticals. The Treasury considers that it secured a good deal for the UK, reducing the cost, ensuring private sector partners were involved, and requiring other universities to benefit through the National Competitiveness Network. In the end, the Treasury had to decide whether to accept a partnership with MIT on the basis of the deal that was available. At \$200 million the answer was certainly no, but at around \$100 million the answer was yes. CMI's view is that the deal on these terms was a bargain for the UK taxpayer.¹⁵

11 Qq 4, 14, 141–144, 146

12 Q 156

13 C&AG's Report, para 1.22

14 *ibid*, para 1.19; Qq 18–19, 168

15 Qq 20, 24, 169

Absence of a formal appraisal

9. The Treasury expects other departments to follow its guidance, but considered it was not possible to do a full ‘green book’ appraisal at the time of its discussions with MIT because there was no business plan that could be appraised. The Department had concerns soon after CMI started about its ability to develop effective project approval systems and its financial accountability and expertise. But the Department did not know what would have happened if it had started earlier with all its processes and procedures, and thought that trying to resolve these issues before funding was granted might have jeopardised the initiative.¹⁶

10. The C&AG’s Report nevertheless suggests that some more formal appraisal, for example drawing on best practice from the private sector, which relies on business plans containing indicative objectives, would have been possible and valuable. It would also have helped set more realistic expectations for the initiative.¹⁷

State aid

11. During the second stage of negotiations, the Department considered whether its funding of CMI would constitute “state aid” under the Community Framework for State Aid for Research and Development. The Department took the view that it did not because CMI was to be a non-profit making higher education and research establishment whose results would be widely disseminated (with the exception of those relating to intellectual property rights).¹⁸

16 C&AG’s Report, para 3.11; Qq 5–6, 15

17 C&AG’s Report, para 1.20

18 Qq 40-60; Ev 19

2 Managing the initiative to meet its objectives

Absence of detailed objectives

12. Neither university had wanted to set specific objectives at the start. The Department had to judge whether to try to impose the usual objectives and milestones, against the insistence from both partners that these measures would constrain the very innovation the project was trying to encourage. There was an obvious contradiction between a mission to create new ideas, and laying down in advance what the ideas should be. CMI's mission is "to enhance the competitiveness, productivity and entrepreneurship of the UK economy...". The Department considered translating the high level aim into specific objectives and at the strong urging of the two universities was persuaded against.¹⁹

13. But setting genuinely indicative objectives, with a clear intention that they would be subject to regular review and alteration, might have helped to clarify and draw together expectations, and to provide a better basis from managing and monitoring the initiative.²⁰

14. In the light of the lack of objectives, the Department insisted on a more 'hands on' management style than usual. This approach, which included regular contact with CMI staff and frequent meetings with the two executive directors, was essential in the circumstances but it did take up disproportionate resources in the Department.²¹

Overoptimistic plans and expectations

15. CMI's spending has been slow compared to initial expectations (**Figure 2**), but the problem lay with the unrealistic plans that the two universities would spend at an average rate from the day the CMI started and produce its first results shortly afterwards. In the event, there was very little expenditure in the early years because the Department, in agreement with CMI, decided not to embark on projects before the necessary objectives and processes were place.²²

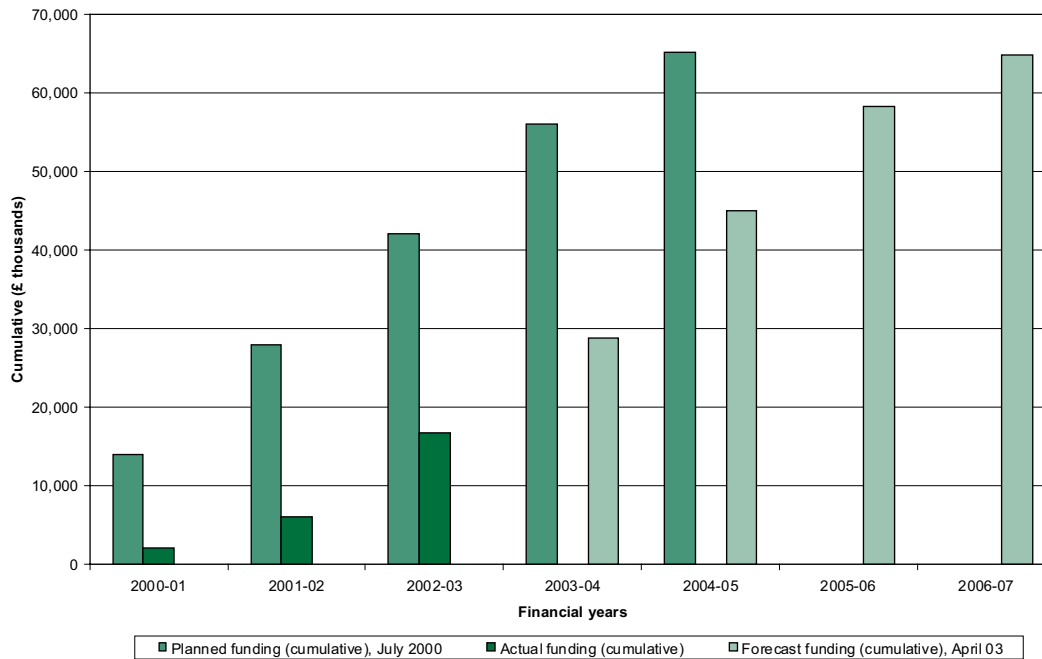
19 Qq 9, 16, 94, 103-104, 120-121; C&AG's Report, para 1.32 and Figure 1

20 C&AG's Report, para 1.32

21 Qq 9, 94, 121, 178; C&AG's Report, paras 3.7, 3.10

22 Qq 10, 12, 122, 128

Figure 2: Use of funding was much slower than originally planned



Source: Department of Trade and Industry data, as at April 2003

16. There was no feasibility period, which would have provided time to set up CMI: to develop its infrastructure, recruit and train staff and to devise organisational strategies. However, the no-cost extension agreed in June 2003 has had a similar effect by providing an extra year, which would enable some of CMI's projects to run for up to three years.²³

The mid-term review

17. On taking up post, CMI's current Executive Directors undertook a 'mid-term review' of strategy and objectives and assessed activities. The review concluded that all current projects were achieving more by bringing together Cambridge University and MIT than the two universities could have achieved separately.²⁴

²³ Q 10; C&AG's Report, para 3.9

²⁴ C&AG's Report, para 3.23; Q 69

3 Securing benefits for the UK

Who benefits from the initiative

18. Each CMI project involves people from both universities. Any intellectual property created from a project would be filed in whichever institution created it, but CMI has first right to exploit the intellectual property. If CMI were no longer in existence, the condition that the intellectual property should be exploited for the benefit of the UK would still apply.²⁵

19. Many of CMI's activities are catalysts for long-term impact on the economy. Many outcomes will not be realised for some time, are complex and intrinsically difficult to measure. Large-scale potential impacts such as the UK taking a leading role in the next generation of aircraft or drug discovery will not be achieved for ten years, but impacts at a lower level could be expected within two or three years. Other potential benefits are indirect. For example, students involved in CMI activities might go on to become entrepreneurs and to establish companies in their own right.²⁶

Evaluating the benefits to the UK economy

20. If CMI's projects succeed in generating results earlier through these collaborations than might otherwise have been achieved, and if, because of CMI, the results can be exploited for the UK, there is the potential for benefits well in excess of the cost of CMI.²⁷

21. The Department has appointed consultants to evaluate CMI as part of an overall evaluation of its knowledge transfer portfolio. Beyond this evaluation, the Department will measure CMI's success by reference to criteria such as jobs and companies created and the increase in entrepreneurial activity in university education. Another mark of success will be changing the culture and people's behaviour in a way that brings about improvements in teaching and in collaboration on programmes of research.²⁸

22. CMI is itself developing ways to evaluate knowledge transfer initiatives. The Department will need to make arrangements to ensure this work continues once public funding ends.²⁹

Sustainability

23. The Department has committed funds to CMI for the six-year period only, and the current and future reviews of knowledge transfer initiatives will influence any decision by the Department about future funding. It is not clear yet whether CMI will become self-sufficient or where future funding might come from, though some consideration is given to future funding when activities and projects are first set up. The majority of CMI's

25 Qq 61-64, 87, 89, 92-93

26 C&AG's Report, paras 2.4-2.5; Qq 71, 110

27 Qq 24, 67, 162

28 Qq 17, 106-107, 112-116; C&AG's Report, para 2.12

29 Q 113; C&AG's Report, paras 2.11, 3.15

activities are expected to continue in some form. For example, the technology transfer training programme has already secured separate funding to become self-sustaining, and CMI's major research teams will continue within the universities and be subject to commercial and other public funding.³⁰

30 Qq 30-32, 109, 113, 173

Formal minutes

Monday 24 May 2004

Members present:

Mr Edward Leigh, in the Chair

Mr David Curry
Mr Ian Davidson
Jim Sheridan

Mr Gerry Steinberg
Jon Trickett
Mr Alan Williams

The Committee deliberated.

Draft Report (Cambridge-MIT Institute), proposed by the Chairman, brought up and read.

Ordered, That the Chairman's draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 23 read and agreed to.

Conclusions and recommendations read and agreed to.

Summary read and agreed to.

Resolved, That the Report be the Thirty-first Report of the Committee to the House.

Ordered, That the Chairman do make the Report to the House.

Ordered, That the provisions of Standing Order No. 134 (Select Committees (Reports)) be applied to the Report.

Adjourned until Wednesday 26 May at 3.30 pm

Witnesses

Monday 29 March 2004

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Sir Robin Young KCB, Department of Trade and Industry, **Mr John Kingman**,
HM Treasury, and **Professor Michael Kelly**, Cambridge-MIT Institute

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List of written evidence

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Second Report	The new electricity trading arrangements in England and Wales	HC 63	<i>(Cm 6130)</i>
Third Report	The Sheep Annual Premium Scheme	HC 64	<i>(Cm 6136)</i>
Fourth Report	Improving service delivery: the Forensic Science Service	HC 137	<i>(Cm 6155)</i>
Fifth Report	Warm Front: helping to combat fuel poverty	HC 206	<i>(Cm 6175)</i>
Sixth Report	Department of Trade and Industry: Regional Grants in England	HC 207	<i>(Cm 6155)</i>
Seventh Report	Progress on 15 major capital projects funded by Arts Council England	HC 253	<i>(Cm 6155)</i>
Eighth Report	The English national stadium project at Wembley	HC 254	<i>(Cm 6155)</i>
Ninth Report	Review of grants made to the National Coalition of Anti-Deportation Campaigns	HC 305	<i>(Cm 6175)</i>
Tenth Report	Purchasing and managing software licences	HC 306	<i>(Cm 6175)</i>
Eleventh Report	Helping consumers benefit from competition in telecommunications	HC 405	<i>(Cm 6191)</i>
Twelfth Report	Getting it right, putting it right: Improving decision-making and appeals in social security benefits	HC 406	<i>(Cm 6191)</i>
Thirteenth Report	Excess Votes 2002–03	HC 407	<i>(N/A)</i>
Fourteenth Report	Inland Revenue: Tax Credits	HC 89	
Fifteenth Report	Procurement of vaccines by the Department of Health	HC 429	
Sixteenth Report	Progress in improving the medical assessment of incapacity and disability benefits	HC 120	<i>(Cm 6191)</i>
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Nineteenth Report	Making a difference: Performance of maintained secondary schools in England	HC 104	
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Twenty-third Report	Government Communications Headquarters (GCHQ): New Accommodation Programme	HC 65	
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Twenty-ninth Report	Improving public services for older people	HC 626	

Thirtieth Report	Out of sight—not out of mind: Ofwat and the public sewer network in England and Wales	HC 463
Thirty-first Report	Cambridge-MIT Institute	HC 502

The reference number of the Treasury Minute to each Report is printed in brackets after the HC printing number

Oral evidence

Taken before the Committee of Public Accounts

on Monday 29 March 2004

Members present:

Mr Edward Leigh, in the Chair

Mr Richard Allan
Mr Richard Bacon
Mrs Angela Browning
Mr Frank Field

Mr Brian Jenkins
Mr George Osborne
Jon Trickett
Mr Alan Williams

Sir John Bourn KCB, Comptroller and Auditor General, National Audit Office, further examined.

Mr Rob Molan, Second Treasury Officer of Accounts, HM Treasury, further examined.

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL:

Cambridge-MIT Institute (HC 362)

Witnesses: **Sir Robin Young KCB**, Permanent Secretary, Department of Trade and Industry (DTI), **Mr John Kingman**, Head of Enterprise and Growth Unit, HM Treasury and **Professor Michael Kelly**, Executive Director, Cambridge-MIT Institute (CMI), examined.

Q1 Chairman: Good afternoon and welcome to the Committee of Public Accounts where today we are considering the Comptroller and Auditor General's Report on Cambridge-MIT Institute. We welcome back to our Committee Sir Robin Young, who is Permanent Secretary at the Department of Trade and Industry, Mr John Kingman, who is Director of Finance Regulation and Industry at HM Treasury and Professor Michael Kelly, Executive Director at Cambridge-MIT Institute. You are all very welcome. Before I start I should also like to welcome to our Committee the Chairman and members of the Public Expenditure and Audit Committee of the Republic of Latvia, whom I and my colleagues will be seeing tomorrow and of course as new entrants to the European Union. Mr Kingman, can we look now at page 15 and paragraph 1.5 of the Report? You set up this collaborative venture for £68 million. Why did you not involve your colleague to the left of you at the Department of Trade and Industry?

Mr Kingman: These sorts of handling judgements are always very difficult and a judgment was made by those involved at the time that this was the kind of negotiation where it was going to be important to be able to act quickly, responsively and decisively. It was decided that it would not help that to have a large number of officials from around Whitehall involved in the process.

Q2 Chairman: You wanted to act quickly and decisively. Will you now look please at the chronology, which you can find in Figure 3 on page 7? The first stage of negotiations took 14 months.

Mr Kingman: Yes.

Q3 Chairman: Was it not possible to involve the Department of Trade and Industry, which you would have thought would be closely interested in this subject, given that these negotiations took as long as 14 months?

Mr Kingman: The key point here is that it clearly could not have been envisaged and was not envisaged that these negotiations would take as long as they did. There was a good deal of brinkmanship in this negotiation. There were several points where it looked very much as though it was close to agreement, several points where it all looked as though it was going to collapse. Clearly nobody expected it would take this long.

Q4 Chairman: Sir Robin, were you put at a disadvantage, given the fact that you were not involved in this process as you might expect to be?

Sir Robin Young: In hindsight, no, I do not think so. It was important at stage one to get the high level commitment in principle and then to hand over to the detailed negotiations, which in hindsight might actually have wrecked the achievement of the signing up in principle.

Q5 Chairman: Other members can come back to that point. Can we look again at page 15 and paragraph 1.17? Mr Kingman, why did you break your own rules?

Mr Kingman: We did not break our own rules. As the Report says, it would not have been possible in this case to do a full green book appraisal on this project, simply because, at the stage we were discussing it with MIT, there was no business plan which could be appraised.

Q6 Chairman: So what did you do? If there were some rules which were not applicable, could you not at least have gone through the rules one by one, worked out which were inappropriate or could not be applied for any good reason, rather than just throw the whole lot in the waste-paper bin? After all, you are the Treasury. You expect this of other

 Department of Trade, HM Treasury and Cambridge-MIT Institute

government departments. You should be setting an example in government and now we see you setting aside your own rules.

Mr Kingman: I do not accept that we put the rules in the waste-paper bin. The green book, which sets out the provisions on these things, says that its provisions should be applied proportionately and wherever it is practicable to apply them. I believe that was done in this case.

Q7 Chairman: Why did you not involve other universities?

Mr Kingman: This was a discussion which was had with MIT during the negotiation and we certainly did put to MIT the case for looking at a broader range of UK universities. It became clear in the course of those discussions that Cambridge was very much their preference. Therefore the option we then discussed with MIT, which was not part of the original proposition, was that we should involve a broad range of British universities through the National Competitiveness Network (NCN).

Q8 Chairman: I understand that they insisted on Cambridge. Just because they were hell bent on Cambridge, does not necessarily mean you had to follow down that route, does it? Other universities might well feel very aggrieved. The Treasury has apparently broken its own rules and has not seen fit either to involve its sister department Trade and Industry or involve other universities.

Mr Kingman: We were very aware that it was not self-evident that Cambridge would necessarily be a perfect partner and we did talk to MIT about a range of other institutions. For example, we talked to them about the case perhaps for engaging with a partner which would have more land around it to do spin-outs and so on. However, MIT were clear that was their preference.

Q9 Chairman: Could we please look at page 18 now, paragraph 1.32? Do you think that if you had set specific objectives for MIT, it might have achieved more?

Sir Robin Young: It is hypothetical. We were discussing the start-up of a new, innovative and, we still think, rather exciting project. Both partners, MIT and Cambridge, said we should not do that. So we had to judge whether to try to insist on imposing objectives and milestones, *etcetera*, as we normally would on projects, as against both partners insisting that that would stanch the very innovation the project was trying to encourage. As an alternative, and as it says on page 18, we decided to have a rather hands-on control. Because we could not set detailed objectives against which we could judge them, we thought we had to impose a rather more hands-on control approving operating plans, *etcetera*, in the absence of objectives. It is hypothetical. We could have imposed some objectives. They said that would have suffocated the very innovation which the project was trying to encourage. We went along with that but as a *quid pro quo* insisted on a much more hands-on management style.

Q10 Chairman: You will see our concern. We are talking about £68 million, so normally we should like to have objectives set if £68 million of public money is being expended. Let us pass on from objectives to paragraph 3.9 on page 26. Why did you not set up an initial feasibility period to provide time for setting up? Would this not have been a worthwhile thing to do?

Sir Robin Young: Again, hypothetically I suppose we could have. What has actually turned out is that we extended, with no extra cash, the overall programme, which had the same effect. If you look at the expenditure programme in Figure 15 on page 26 you will see that in actual fact what you suggest really happened in the sense that there was very little expenditure in the early years because the department, in agreement with CMI, decided not to embark on projects before we had the necessary objectives and processes in place. If you look at the very low spending in the years 2000–01 and 2001–02 in Figure 15, I would argue that has the same effect as you were just suggesting.

Q11 Chairman: Professor Kelly, you have a mid-term review going on at the moment, do you not?

Professor Kelly: Yes, we commissioned one when we came in.

Q12 Chairman: What have you found from it?

Professor Kelly: We have found that it is typical of any second round start-up. If I had been there two years beforehand I would have done exactly the same in terms of letting a thousand flowers bloom. My main concern, being late into the game, was that the idea that two great universities would put themselves together, spend at an average rate from day one and produce results on day two was overly ambitious and I think the Report actually says that. What we found was that a lot of programmes had been started and we were in a position to take forward a sub-set of those. I would associate exactly the same thing with any form of start-up.

Q13 Chairman: Sir Robin, I finally come back to you. Although these projects are exciting from a scientific point of view, what this Committee are interested in of course is who is going to benefit from them financially. You accept that is rather important, do you not, especially to the Department of Trade and Industry? You can see this mentioned in paragraph 2.5 and Figure 11 on pages 20 and 21. Who will benefit directly from these projects do you think and what systems do you have in place to encourage that benefit?

Sir Robin Young: Perhaps we should distinguish between early successes, which are set out on page 20 between paragraphs 2.6 and 2.10, where a lot of things are already happening, which Michael Kelly can expand upon, if you would like him to, which means that the university and business community is already benefiting from new collaboration ideas, but for the longer term, the truth is that it is too early to say. If I could refer you to the overall conclusions of the NAO Report, paragraph 20 on page 10, we all agree that some of the key outcomes are intrinsically

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difficult to measure and will not be realised for some time. If the silent aircraft project takes off in 20 years' time, to the benefit of everyone who lives anywhere near an airport and I hope for all of us, it will not be clear to what extent the CMI initiative has helped that. I use that as an example, not because I am an expert in silent aircraft, which I am not, but if that were to take place it would be fantastically valuable for UK business, also for society at large, I would argue, as we benefit from less noisy aircraft, silent aircraft. To what extent the CMI initiative can claim credit for that is an issue between us. The report does not shrink from that, nor do we. We are saying that this is an exciting and innovative way of encouraging university/business collaboration which all reports we have all seen say is key to UK productivity and competitiveness.

Chairman: The Comptroller and Auditor General does these reports entirely independently of course, but it was a member of our Committee who made a suggestion he should look into this and that was George Osborne, whom I now call.

Q14 Mr Osborne: Sir Robin, I was wondering whether you shared Mr Kingman's assessment that in order for the Treasury to act quickly, responsively and decisively, it was important not to involve your department.

Sir Robin Young: The conclusion I certainly share is that it was really important to clinch, at the highest possible level, the high level commitment, to grab the prize of the potential collaboration between these two world-class, best-in-the-world, universities. If it was necessary in order to clinch MIT's collaboration that this was kept at a high level in the Treasury, that is fine by us. We were collaborating closely with Treasury on the innovation and productivity strategy, so there was nothing between us on the goals and it was good to clinch high level commitment perhaps before some of the partners actually realised about the grunge they had to go through once DTI was involved.

Q15 Mr Osborne: That of course is the crux of the Report, that these high level negotiations took place. They were not actually aware of the complexities of trying to set up CMI. It says in the Report that by January 2001 the DTI had become seriously concerned about CMI's ability to develop effective systems for approving projects, about its financial accountability and its expertise. Would it not have been better to have these concerns before the government had given it £65 million of public money?

Sir Robin Young: We might then have lost the prize. What we are arguing is that the prize is still there to be had and I am glad to say that the Report confirms that. We might have lost the prize if we had come in too early with all our bureaucracy and stuff. I insist though that we did indeed come in with our bureaucracy and stuff and the Report is good enough to say we did. I think the two-stage thing, which the Report rightly set out, has delivered the goods in keeping MIT and Cambridge University together. We do not know what would have

happened if DTI had come in earlier with all our processes and procedures, many of which this Committee would normally support.

Q16 Mr Osborne: Is it not clear that you did not really know what the prize was that you were after. All you were after was this deal with MIT and it was only once you had it that you then considered what you were going to make of it.

Sir Robin Young: I would argue, in particular in an innovation area, it is wrong to say we should always know what we want; indeed I would argue it is a slight contradiction in terms to be seen saying we want an innovation project which looks at new ways of dealing between universities and business, but we must lay down right from the start exactly what it is we are going to get. I would argue that is a contradiction in terms. What is clear and what the Report sets out is that MIT have been incredibly successful in the States and that is set out well in Figure 5 on page 14, making a positive impact on the US economy. The prize we still think we have within our grasp is to extend the concept of MIT's success in the US economy to Cambridge University's success and other universities' success in the UK economy. That is the prize.

Q17 Mr Osborne: That is how you are explicitly going to measure the success of CMI, that it is going to create, as is made clear in the Report, what they managed to do in MIT, new jobs, new companies, companies with a high turnover. It is explicitly focused on companies and jobs.

Sir Robin Young: Over time we shall indeed be measuring CMI by those criteria and by lots of others, about the insertion of entrepreneurial activity into university education, the expansion of teaching, not just of academics but business people, entrepreneurs and experts in knowledge transfer. We are trying to import the whole MIT package into the British university system, from which it is absent at the moment.

Q18 Mr Osborne: Could I ask Mr Kingman how the £68 million was arrived at?

Mr Kingman: Yes. This was a process of negotiation. The original proposition from MIT was that we should put in approximately \$200 million. We negotiated that figure down during the 14-month period to \$100 million and it is clear that in MIT's mind the comparison was with the venture they had in Singapore.

Q19 Mr Osborne: Does that not suggest that there was no actual assessment of how much money they needed? It was just that this was what they did in Singapore and it cost \$100 million so we will change \$100 million into pounds and give them £68 million.

Mr Kingman: This was a negotiation and the Report touches on this in paragraph 1.13, where it describes in a sense the position we were in *vis-à-vis* MIT. It was not possible to do a detailed appraisal of what we would get from the project without a business plan and in a sense therefore we had a chicken and egg problem. The judgement we had to make was

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whether we were willing to do a partnership with MIT of the kind we had been discussing for, in broad terms, what turned out to be their bottom line in the negotiation.

Q20 Mr Osborne: The truth is that they dictated entirely the terms of this. You call it a negotiation, but they insisted on Cambridge University and you could not change that. They insisted on at least \$100 million or £68 million. They insisted on a lack of clear objectives in what Sir Robin calls the bureaucratic DTI stuff. They had all the cards because you wanted to do a deal with them; you had given a verbal commitment that you would do a deal with them. Is that not the case?

Mr Kingman: No. It is true that they were in a relatively strong negotiating position, but we achieved a good deal. We got the bill down from \$200 million to \$100 million, we secured the agreement that we should involve private sector partners in this, which was not part of the original venture. We secured agreement that we should develop the National Competitiveness Network, which again was not part of the original venture. We also got the proposition closely focused on the UK productivity agenda.

Q21 Mr Osborne: How much of the £65 million has to date been spent?

Professor Kelly: As at the end of January £29 point something million, of which 50.1% has been spent at MIT and 49.9% spent in Cambridge. That is near enough to 50:50 as makes no difference.

Q22 Mr Osborne: Either half the money or, if I were a politician I would say over half of the British taxpayers' money, is being spent at the richest university in the world or in America?

Professor Kelly: No, it has only one quarter of the wealth of a university only five miles up the road.

Q23 Mr Osborne: London?

Professor Kelly: No, Harvard. I am sorry, I thought you were referring to MIT. I have to point out that Harvard is several times richer than Cambridge.

Q24 Mr Osborne: If Harvard are richer than MIT, which I concede, MIT is a pretty wealthy institution. Is it right that such a large sum of British taxpayers' money is being spent in an American university when we constantly have British universities telling us, particularly this week, how under-funded they are?

Professor Kelly: I find that a very easy question to answer, in fact one of the easiest. Frankly if we are serious about being global in education and really wanting to do something, nobody disputes the fact that MIT is in a league on its own in terms of impacting the economy. If we want any of that, and that is a free judgment which is made by other people, they have named their price. I personally think that is a snip and I say that advisedly. What we are doing is getting the whole of Cambridge at many points interacting with the deep ethos of MIT, with over 130 people working at both places, a dozen

academics, a number of programmes in educational reform, taking us into the next generation of pharmaceuticals and industry, all the things this country needs. We have a toehold in what is going to be a global agenda in future. The axis between Cambridge and MIT is going to turn out to be the most exciting thing which has happened in the last 20 years. I think the whole thing is a snip and a bargain to the UK taxpayer who will get the money back one hundred times over.

Q25 Mr Osborne: Given what you have just said, do you think it is essential that the CMI project continues beyond its initial shelf life?

Professor Kelly: Indeed.

Q26 Mr Osborne: With public funding?

Professor Kelly: A small element in a model I would be working on, simply because at the moment—

Q27 Mr Osborne: What is “a small element”? How much are we talking about?

Professor Kelly: About 25% to 30%.

Q28 Mr Osborne: Just to be clear, 25% to 30% of the £65 million or . . . ?

Professor Kelly: No. If you want a full description on that, I can certainly give you that. It is not in the Report here.

Q29 Mr Osborne: But it does require ongoing public money.

Professor Kelly: We can do a number of things. If I just put it to you that at the moment we are doing over 70% of the Lambert agenda and 70% of the innovation agenda issues before government at the moment and we are two and a half years in with the results starting to emerge, we are in a prime position to take this whole agenda forward nationally.

Q30 Mr Osborne: Sir Robin, are you going to give Professor Kelly that ongoing commitment?

Sir Robin Young: We have only committed ourselves to the now six-year programme set out in the Report, but, as is well known, there is a ten-year forward look at the science and innovation strategy for the government and as the Report also reminds us in paragraph 2.12, we in the department have just commissioned consultants to look at the effectiveness of all our expenditure programmes on knowledge exchange asking consultants to identify the gaps and good practice lessons which might be transferable between institutions and between our current initiatives. I think the answer to your question is that in the context of a ten-year forward look at science and innovation we are going to look at all our knowledge exchange initiatives, coupled with the need to carry on increasing the basic science budget and to try to look at ways in which we can most enhance the UK's competitiveness on the innovation front. There is no guarantee to increase.

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Q31 Mr Osborne: Is that a yes?

Sir Robin Young: No, no. I was about to sum up by saying that there is no guarantee to increase the six-year programme which we have announced and yours is a very topical question because the ten-year science and innovation programme is in the process of being worked out. This consultant's report, which we shall of course publish and give the Committee, will come out in the autumn.

Q32 Mr Osborne: Mr Kingman, as the Head of the Enterprise and Growth Unit at the Treasury would you like to see the money continue to CMI?

Mr Kingman: We shall have to see. That decision will principally be for the Office of Science and Technology which is part of Sir Robin's department, but they may wish to talk to us in the course of the spending review about the case and we would look at the case.

Q33 Mr Osborne: If what Professor Kelly says is true, that this is a unique collaboration with the world's leading university, then is this not something we must build on?

Mr Kingman: We and Sir Robin's department will have to look at the case and it will depend on the Institute's success in having raised private money and so on.

Q34 Mr Osborne: How did this CMI come about? What was the initial meeting? Did MIT approach us? What was the actual event which initiated all this?

Mr Kingman: My understanding is that officials in the Treasury became aware in the summer of 1998, through academics in the UK with MIT connections, that MIT were interested in developing a European partnership. The Chancellor was in the US for August, I believe, and it seemed a sensible idea for the Chancellor to visit MIT and not least indicate that we would be willing to have a discussion.

Mr Osborne: No wonder the DTI were not told a thing.

Q35 Jon Trickett: CMI is a limited company. Can you tell me who the shareholders are? Perhaps Sir Robin can tell me that.

Sir Robin Young: The shareholders?

Q36 Jon Trickett: Yes.

Sir Robin Young: The governance is set out and the board of directors—

Q37 Jon Trickett: No, I am asking you to tell me who the shareholders are.

Sir Robin Young: I suppose we are. No, it is the universities. I am just trying to give you a completely accurate answer to your question. The governance is set out in appendix 1.

Q38 Jon Trickett: I can see that.

Sir Robin Young: The money comes from the government and the shareholders are the two universities.

Q39 Jon Trickett: Fifty:fifty?

Sir Robin Young: Yes.

Q40 Jon Trickett: Whenever I have encountered government money being made available to private companies, as this is, there has been all kinds of European legislation preventing subsidies. Perhaps Mr Kingman can explain to me, but briefly, just how we escape the European competitiveness legislation?

Mr Kingman: I am not certain that I know the answer to that.

Q41 Jon Trickett: Does anybody?

Sir Robin Young: We are allowed to fund research.

Q42 Jon Trickett: This is not. I am going to come onto the character of the work, but it is not quite research, is it?

Sir Robin Young: Are you referring to state aid? This is not state aid to a company.

Q43 Jon Trickett: What is it then?

Sir Robin Young: It is public financing of a research institution with a science budget.

Q44 Jon Trickett: It is a private company. You just told me that the shareholders are independent.

Sir Robin Young: 100% funded by—

Q45 Jon Trickett: It is state aid, is it not?

Sir Robin Young: Only in the sense that research councils are also state aid.

Q46 Jon Trickett: Research councils give money to academic institutions which are not limited companies. This is state aid to a limited company. It is clearly in breach of the European legislation, is it not?

Sir Robin Young: I would say not.

Q47 Jon Trickett: Has anybody ever considered the question? Has that ever been considered?

Sir Robin Young: Not to our knowledge, but we will seek advice.

Q48 Jon Trickett: It would be handy to get a note.

Sir Robin Young: Of course; we will let you have a note.¹

Q49 Jon Trickett: When I have tried to help people in my constituency who were working in coal mining, we were told by your department that it breached state aid rules. I should be very interested to see how we can employ academics but not coal miners. Are these subsidiary projects which then go on, some of which are named, for example the silent aircraft, corporate structures or are they simply working partnerships? Are they corporate bodies, are they limited companies in their own minds? Let me take you on to that silent aircraft for example.

Professor Kelly: They are straight research contracts as with any of the others which the University of Cambridge gets, with an element going to

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Cambridge and an element going to MIT. In effect in all cases we have industrial support into the programme, which is part of our programme, so there is work going on in Cambridge and MIT on the development.

Q50 Jon Trickett: Is the silent aircraft project a company in its own right?

Professor Kelly: No.

Q51 Jon Trickett: So it is just a collaborative project.

Professor Kelly: It is a straight research contract with Cambridge and MIT.

Q52 Jon Trickett: I notice that there are some private companies involved, for example British Airways and Rolls-Royce and others as well.

Professor Kelly: Yes.

Q53 Jon Trickett: Supposing some piece of knowledge emerges which can be used commercially to generate larger profits. Who owns the intellectual property rights?

Professor Kelly: The intellectual property which arises out of any work done at Cambridge belongs to Cambridge University and any work which arises at MIT belongs to MIT. The point about it is that CMI has the exclusive first use of that and all of that—

Q54 Jon Trickett: Can you just give us an assurance, yes or no, that no profit will be made out of such knowledge by British Aerospace, Rolls-Royce or anybody else from their collaboration in that project?

Professor Kelly: No, I could not give that guarantee.

Q55 Jon Trickett: Why not? You have just told me that the IPR belongs to Cambridge.

Professor Kelly: Yes, so it will be ours to use. The point is that collaboration goes beyond IP, there is know-how and all sorts of other things. What we are trying to do is build up the nexus where the next generation of civil aircraft are designed between Cambridge and Cambridge. We want as many partners as possible into the party.

Q56 Jon Trickett: What interests me is the fact that we have given state aid to a company, as I insist it is, CMI. They then set up a collaborative project involving private sector companies. No subsidiary limited company has been created to own the intellectual property rights.

Professor Kelly: That is right.

Q57 Jon Trickett: You said they belong to Cambridge.

Professor Kelly: That is correct.

Q58 Jon Trickett: Why do they not belong to the company?

Professor Kelly: Because that is the deal under which those companies have joined the consortium.

Q59 Jon Trickett: Which companies?

Professor Kelly: You have mentioned Rolls-Royce for example. They have funded engineers and have given—

Q60 Jon Trickett: So we have given a grant to a company which has then provided seedcorn funding to a project from which private companies may be going to get very large amounts of return.

Professor Kelly: I should like to think that every single grant from the research councils to the universities is in exactly that same position. The councils make a point that 60%—

Q61 Jon Trickett: Yes, but we have adopted a particular *modus operandi* by creating a limited company. Sir Robin, will any dividend ever be declared by this company? Is one of its objectives to realise a rate of return and to produce a dividend? If so, will the first call on any surplus created be the £68 million or whatever it has cost the Treasury? Will that money ever come back? It is possible that one of these projects could generate huge amounts of money and I personally hope it does, but will the money come back at some point? It sounds as though it will not.

Sir Robin Young: The commitment is to have this company in being for six years, after which, on current plans, it would stop being in receipt of public money unless, in answer to Mr Osborne's question, we give it some more later. The key point which Professor Kelly has just made is that the intellectual property rights, as against the potential profit by those who do deals with those who hold the intellectual property rights, namely private companies, as with all other research grants and university funded technological research, first of all go to the CMI company, as long as it is there. If the company is no longer there, it goes to Cambridge University. Intellectual property rights will rest with Cambridge University, as other intellectual property rights from other inventions publicly funded.

Q62 Jon Trickett: Can you give me an assurance that none of the £68 million will result in intellectual property rights belonging to American private corporations, which is where we seem to be going, is it not? 50% of the IPR will belong to MIT. Presumably American corporations are involved. Are we sure that the IPR and therefore the profits which result from that will not . . . Are we not exporting significant amounts of profit? There seems to be no ownership of these projects by the Treasury, the department or by the company.

Sir Robin Young: I need to step back a bit. The projects will only be funded through CMI if they are judged to enhance the competitiveness, productivity and entrepreneurship of the UK economy. The first test is that we are only going to finance things via CMI if they enhance the UK economy. Second, if intellectual property is obtained it stays first with CMI and if CMI is no longer there it goes to Cambridge University.

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Q63 Jon Trickett: You did not answer my question in any way and I suppose everybody noticed that you did not answer my question. May I go back to Mr Kingman? Here we have a company which has been established by two independent bodies. It is an independent limited company. It is independent of the state. It has received a large amount of grant. It seems to have ceded control of intellectual property rights which it is going to create, some of which will stay in the UK—and bravo perhaps for that—but some of it seems to be going into the United States and probably into the private corporate sector there as well. Are you happy with that?

Mr Kingman: The objective for this venture and the condition for any public money going into it is that the work it does should be of benefit to the British economy and that is the benefit we are aiming to secure from this.

Q64 Jon Trickett: Yes, but I asked you a different question. Thank you for giving me that answer and that is very helpful, but I am asking you whether you and HM Treasury are happy that the private corporate sector in the United States may well benefit from intellectual property rights created by this company, as appears to be the case from my questioning.

Mr Kingman: My understanding is that the intellectual property rests with the universities, but the condition of public money is that the work it does should be of benefit to the UK economy and that is the benefit which should flow back.

Chairman: We now welcome a new member to our team, Angela Browning.

Q65 Mrs Browning: May I begin with a question to Mr Kingman? In the preface to the Report, it says “... the Treasury made it clear that CMI’s task was to ‘think the unthinkable’ in generating ideas for applying scientific research”. Just define for me, will you, please, in Treasury-speak what “thinking the unthinkable” is?

Mr Kingman: I am tempted to say that it is difficult to define the unthinkable. There is a great deal of evidence that one of the long-running weaknesses of the British economy has been a weakness in innovation and a weakness at turning academic work into commercial, bankable ideas. That was very much the thought process which led to setting up this initiative.

Q66 Mrs Browning: From the Treasury perspective you are quite comfortable then that what is done by CMI is probably quite a high risk agenda, because in order to do that, I am assuming that you are expecting them to take more risk than, say, one would expect to see in the normal relationship in, say, a science park, which is quite an old concept of bringing together business and academia in a certain location and seeing whether you can use research and business together to bring products to market. What is it over and above that, that you see CMI doing that is higher risk?

Mr Kingman: I would not necessarily say that the work CMI does is more high risk than that in a science park. We are funding a good deal of activity across British universities and research council institutes and so on, which is intrinsically extremely uncertain and its benefits are uncertain. That is in the nature of the work, but there is serious evidence that is a rational thing to do, that the economic returns from that are attractive. The thing which makes Cambridge-MIT unique is the partnership with MIT which is the leading university of its kind in the world.

Q67 Mrs Browning: You talk about innovation and entrepreneurs, but innovators and entrepreneurs are by definition risk takers. They very often risk their own money or they borrow money to risk. In terms of what these projects are going to turn into ultimately to benefit the UK economy—and I probably do not have quite the concern that my colleague on my right has about the marketplace and the profitability of that overall impact on the UK economy, I would welcome that, although I understand why he asked you those questions—just flag out for me in what you have in mind, perhaps Sir Robin or Professor Kelly. What is it when these projects come to market, when the intellectual property rights are something which people prize and want to put into a project or a product to make and to improve our economy? What is it exactly? What is the structure of that leaving you and going into the marketplace? Is it because you have already set up collaborative ventures with private sector companies, people you have already made sure are on board? How does that transition take place from just being a high risk, highly innovative academic idea to being something which actually makes a profit, which does improve the British economy?

Sir Robin Young: If I may say so, that is actually the challenge the whole thing was set up to answer in a way and I think it is a key question for the success of this project and the innovation strategy within our overall productivity strategy. What we have done here, by trying to import the MIT ethos and bring together entrepreneurs and academics and peer review, is to try to nail down technological innovations which have the greatest potential for getting the market and thereby making that quantum leap in the UK economy that we need. It is to do with peer review, it is to do with bringing the right people together and it is to do with bringing two universities together with very different cultures, Cambridge with its excellence and MIT with its entrepreneurial flair. It is asking all the right questions at the right time and suddenly making that difference which for all our scientific excellence the UK has not managed to make. I shall let Michael give you an example.

Professor Kelly: I have two or three examples. If I just take the silent aircraft, since it was launched a few months ago, we now have the senior engineer of GE taking leave to come and join us. The situation is that we are hoping to create a crucible where the next generation of civil aircraft is fully designed and where there would be a Cambridge to Cambridge

axis. Without CMI, it would be a United States option, but what we have now is a lot of the best in America and the best of the UK working together through CMI as the link. In the case of digital storage, which was a major problem confronting everybody at the moment, how do you store in a standard way the digital information which comes from research? CMI is the bridge by which Cambridge first and now a lot of other universities have been invited to join an American activity which is very quickly becoming the *de facto* standard; I should like to think the odds are on it. If that happens two years earlier because of CMI, the sums involved in savings from bespoke alternatives will be many times the £65 million we are talking about in this country. Only last week we launched our systems biology or next generation drugs discovery programme. What we had was IBM doing an analysis of the real trouble in the biotech sector with all the patents losing out and the only way to fill that gap over the next few years for the international pharma is to get in serious computing. They have said that they have been working with MIT and they now want to work with Cambridge and AstraZeneca. If AstraZeneca are in a strong position for a few years because of this link, it would be a large amount of IT going into improving the effectiveness of drug discovery. These are major things where we are talking about intrapreneurship rather than entrepreneurship and we make no apology for that particular flag. Our master's degrees are being held up now because they are unique, as far as I know, in being two thirds technical and one third management across a whole range of disciplines in Cambridge with common management cores. We are getting approached by a number of universities asking how we did it and whether they can do it. These are things where we have learnt. The other thing we have learnt from MIT for example is that their speciality is not working with one company at a time but working with a whole sector or a whole value chain and that is something particular that we are doing which we have really learnt how to do from them. There are several other things. Biochemistry was not a subject in 1930, by 1940 it was.

Q68 Chairman: I am going to stop you there. It is all very interesting but it is not fair on the questioner who is time limited.

Professor Kelly: I am sorry; you did ask for examples.

Q69 Mrs Browning: Yes, thank you for answering as fully as you have. It does say in the Report that there are 60 projects either under way or completed. It does not tell us how many have fallen by the wayside so far. Can you give us some idea of that?

Professor Kelly: Yes, I can certainly give you that because we did a detailed review last year with the intention of closing a few down just to show that we meant business. However, there was not a single programme which could be faulted against any of the metrics under which they were set up in terms of

the best of Cambridge working with the best of MIT and the sum being greater than the sum of the parts. The short answer is none of the major programmes we looked at have failed. A number of small £5K personal fellowships were awarded to set things up and we only took a sub-set of those forward, but those were finite and are finished. Nothing has fallen over as far as we are concerned.

Q70 Mrs Browning: May I just ask, as an adjunct to the question Mr Trickett asked you, whether this is a company which has been set up and is it a company limited by guarantee?

Professor Kelly: Yes, indeed.

Q71 Mrs Browning: It is. I just wondered, because I was not quite sure about the shareholding. When do you expect, roughly, I am not asking for a specific date, to be able to say that these are the projects which we have in the pipeline at the moment, but which we think by next year, the year after, will have marketability? What is your aim in terms of using these projects to get them to market?

Professor Kelly: There is a portfolio. There are nine pieces of IP, modest things which we are studying at the moment and we are taking advice from a small sub-committee as to how best to exploit them. There are some larger things coming along and like anything else it is a trajectory. If you want a return at a certain level, I think we will get it within two or three years. If you really want to see what it is that really gave the UK a serious toehold in the next generation of aircraft or drug discovery or the next generation internet, that will be ten years from now.

Q72 Mrs Browning: May I ask you for a short answer? How do you select your projects in terms of the sectors they are in? Are you concerned to cover a spectrum or are you specifically looking at certain sectors?

Professor Kelly: No. Our aim was to get the best as exemplars. From talking to our sponsors, they want us to show them examples of how things are done. There was never an attempt . . . We did look at two other areas in addition to the four KICs, one on energy and one on nano/MEMS, which failed a number of our criteria of the added value being as clear as possible. There are four which we regard as positions where the UK has a presence and has the ability to capture the added value and that was one of our screening processes. After that it was academic excellence and all sorts of other things on top.

Q73 Chairman: Thank you, Professor Kelly. It is always nice to see an enthusiast for a subject in this Committee.

Professor Kelly: I think it is the greatest experiment in the planet.

Chairman: That may be too much enthusiasm.

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Q74 Mr Allan: Sir Robin, your department has the big research budget. I think you spend £2.4 billion a year on science research, large slugs of which go to Cambridge University. Is that correct as a ballpark figure?

Sir Robin Young: Yes.

Q75 Mr Allan: Did you think there was a huge problem? We are looking at something which is either a very odd kind of pet project type of initiative, or part of—as I think you have been trying to describe between you—some major strategy to right a wrong which is that we cannot convert all this money which you spend into business. Did you see this problem there? Do you recognise it?

Sir Robin Young: I certainly do. We have been experimenting in various different ways on ways in which we can bring together universities with business. May I just refer you to a table later on where there are other knowledge exchange initiatives, Figure 13 on page 22? These are different ways of tackling the problem. Look at the 1999 Science Enterprise Challenge Rounds: to foster the commercialisation of research and new ideas, to stimulate scientific entrepreneurship. We and the Treasury have been on the case, as of course have previous governments, trying to nail down why it is that our academic excellence does not transfer itself into business.

Q76 Mr Allan: So you have recognised this problem and you have lots of initiatives, worked out, well thought through, planned-for initiatives which you hope are spending money correctly. Do you not think it is a bit weird that you did not hear about this MIT initiative but it had to come from left field, from the Chancellor being on holiday in the United States, when this is your area of responsibility?

Sir Robin Young: It is all the same agenda. What the Chancellor has done—

Q77 Mr Allan: Why did you not hear of it first? Why did it not come from the DTI, when this is your agenda and you have the big budget? Why has it come from another department?

Sir Robin Young: Hypothetically it could have come from us. We are certainly looking at different ways of tackling the problem. There is no one answer, unless anyone else thinks they have one, as to how to get the collaboration which everyone needs between universities and business. So we have to try different cuts of different cakes.

Q78 Mr Allan: Had this come to you first, you may well have done exactly the same thing?

Sir Robin Young: We certainly should have been extremely excited by partnering the two best in the world to try to look at those two getting together in a way which would then transfer itself to other universities.

Q79 Mr Allan: Do you not think it is abnormal though to have to pay what worked out effectively as a bribe, though not a logically worked out bribe? MIT came along and asked for \$100 million. You do

not do that normally, do you? When Oxford set up a business school they get Mr Said to give them money. Cambridge get Bill Gates to give them money. We do not need to pay everybody else \$100 million, this sort of fairly random figure. I do not know, what we are doing. Are we buying the MIT brand? Is that what the money is for?

Sir Robin Young: Absolutely not. You will see in Figure 13, page 22, there are other initiatives which show what money we do indeed spend to try to get this connection between universities and business. This was a different approach: get the two best in the world together to see what we can learn from them. Rather than spreading it thinly across many universities, as we do in these other programmes—

Q80 Mr Allan: With respect, none of these though is giving British taxpayers' money to a foreign university. With respect, these are giving British taxpayers' money to British universities to enable them to do this work. That is what seems peculiar here.

Sir Robin Young: With respect, I do not think it is the slightest bit peculiar that we should try to learn from the best in the world to help the British economy. To say we can only learn from the less good in the world to help the British economy seems, if I may say so, a rather odd argument.

Q81 Mr Allan: So this is like a huge management consultancy. We are saying to MIT that they are so good at this that we are going to give them \$100 million, £60-odd million, as a management consultancy to come into poor old Cambridge University, who are clearly not able to do this on their own.

Sir Robin Young: If it were the case hypothetically that MIT were better than Cambridge at this particular business of enhancing university business collaboration, if it were the case that Cambridge were our best university on scientific excellence, if it were the case that British competitiveness and British innovation needed closer collaboration between universities and business it would make absolute sense for us to pay for foreign help, whether it was from America or anywhere else, to improve our act for the benefit of the UK economy only. The only test for projects which the CMI helps is that they benefit the UK economy. To say we should not have foreign assistance for that seems odd to me.

Q82 Mr Allan: It is just whether it is done in an upfront manner or not and with normal public expenditure we might have tested, for example, giving all the money to Cambridge or all the money to Oxford or Manchester or Sheffield. You talk about concentration. If we were doing that, then we could have done lots of different options. None of those seem to have been tested or costed, we have just gone for the one where MIT came along and said “Sign this deal quickly or we are going to give it to the French or the Germans”. We have gone and signed the cheque for whatever they asked for.

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Sir Robin Young: I would argue that MIT has a unique global position in being the pioneer in university/business collaboration. It seems very odd for us to be told we cannot take advantage of that and we have only to deal with British universities.

Q83 Mr Allan: So it is a big and expensive management consultancy.

Sir Robin Young: I do not accept that description. It is a pioneering way of getting Cambridge to learn from the best in the university of enhancing business/university collaboration.

Q84 Mr Allan: May I follow up the point about intellectual property with Professor Kelly? You said that the research money is spent on teams both in Cambridge and MIT.

Professor Kelly: Yes.

Q85 Mr Allan: What kind of net outflow of cash is there to MIT? We are funding teams of researchers with British taxpayers' money in MIT.

Professor Kelly: I think I answered that earlier. If you look at the aggregate it is 50:50. Most of the programmes to get the best out of them have teams of roughly comparable size.

Q86 Mr Allan: So half the money is being used to employ and support researchers in MIT.

Professor Kelly: Yes.

Q87 Mr Allan: If the discoveries are as a result of the work done by MIT researchers, does the intellectual property still accrue to Cambridge University as opposed to MIT?

Professor Kelly: No, it does not. Let me repeat what I did say earlier and I was very careful to say that the IP which is generated at MIT belongs to MIT. That is the basis on which they do research with anybody in the world of business and the same applies to Cambridge. Where they are more subtle is to consider how it is used. Their view is that it is not the ownership but the exploitation which is more important.

Q88 Mr Allan: Let us be clear then. British taxpayers' money is funding research being carried out at MIT.

Professor Kelly: That is correct.

Q89 Mr Allan: Any benefit which accrues from that will go to MIT.

Professor Kelly: No, I did not say that. Please, we are in a mindset which is failing and I do not think I am helping the discussion if we do not get beyond this point. That is the following: for anything which is exploited the rights to exploit remain in the first instance with CMI. May I make that clear? So if somebody in the material science department at MIT discovers something new, it is filed at MIT and we are notified immediately to see how we can exploit it in the UK.

Q90 Mr Allan: But they create a business from it. They create silent aircraft at some future point.

Professor Kelly: No, no; let us come back again. It is "we". Every single programme we are doing has a UK focus to it, not an American focus. I do want to nail that one. It is a British focus. So we are trying to get the best processes. They are manifestly more successful at growing big companies and we have to learn from it. So we are learning their way of doing it, jointly with them and applying it into Cambridge. Somebody said to me the other day that I could have bought in six super stars, but you would not have left Cambridge with six super stars. We have 200 people moving around and we are getting the deep culture of the way they do things. It is for the UK.

Q91 Mr Allan: I just want to clarify. So CMI is this institute which is jointly owned by the University of Cambridge and MIT.

Professor Kelly: Yes.

Q92 Mr Allan: It has funded some research which has taken place in MIT. They file the intellectual property rights there.

Professor Kelly: Yes.

Q93 Mr Allan: But if that is then converted into product, whether in America, Britain or anywhere else, you, CMI, get the money.

Professor Kelly: That is right. Let me remind you again. We are the gatekeeper for the exploitation and we are also the first beneficiaries of anything which comes out of it.

Q94 Mr Allan: Turning back to Sir Robin, DTI seem to put a huge management resource into this. It just seems highly disproportionate. You seem to have been thrown a hospital pass by the Treasury here. They have come along and told you how you should spend £65 million of your budget and you are putting huge effort into spending £65 million when you should be getting on and spending the other £2.4 billion.

Sir Robin Young: There is something in that. This is the most innovative project we are dealing with and rather than just saying you can spend it as you want, in the absence of clear objectives—and we have discussed why there could not be clear objectives at the start, because it was so innovative that clear objectives were thought to suffocate the innovation—in the absence of such objectives and milestones and measurements, all the usual tools we have, we decided to be much more hands on. If I had not done that, I would have been criticised in this Committee.

Q95 Mr Allan: Could you cope with more such institutes, or is this a one-off? Do you hope it is a one-off?

Sir Robin Young: We are learning now how to set objectives. At the end of the six years we shall be much clearer on what we could have done six years earlier, if you follow me. At the end of the six years I hope, for a start, there will be a toolkit about how future such projects could be better managed and could start running. This was completely new and innovative, so it could not hit the ground running.

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We have been learning as we go along and after six years I hope and believe, when we get such excellent passes rather than hospital passes, we will be able to manage it in a lighter touch way.

Q96 Mr Allan: Mr Kingman, not to leave you out, you raised earlier the question about private sector funding and this issue of sustainability, which ultimately would come back to the Treasury if they wanted more public funds. Reading the papers here, my understanding is that they had a target to raise £16 million of private sector funding and they only have £10 million. Will they be penalised for that like anyone else would be penalised if they failed to meet their targets?

Mr Kingman: Perhaps Professor Kelly would give the exact numbers. I believe the Institute has raised more than that.

Professor Kelly: It is over £11 million directly into the programme. A number of the industrial subventions are now going straight to projects. For example, the Rolls-Royce contribution to the silent aircraft has gone straight to Cambridge University.

Q97 Mr Allan: Still very light of what they should have done.

Mr Kingman: The target of £16 million remains.

Q98 Mr Allan: So that is a key test.

Mr Kingman: Yes.

Q99 Mr Allan: They have to raise their private finance. That certainly will be taken into consideration when deciding any public finance.

Sir Robin Young: Yes, indeed.

Q100 Mr Jenkins: Sir Robin, were you disappointed or surprised or quite pleased with the way the Report was presented?

Sir Robin Young: I agreed the Report, so I am completely happy with it.

Q101 Mr Jenkins: Did any surprises come out of the Report?

Sir Robin Young: As I say, I agreed it. As always with NAO Reports it comes from good discussion with my colleagues in the department and I think it gives the right flavour of an innovative project pretty well handled; in particular I was pleased with the conclusions at paragraphs 19, 20 and 21.

Q102 Mr Jenkins: So no surprises at all. You are quite happy.

Sir Robin Young: By definition there can be no surprises because we have been discussing it throughout, as always with NAO Reports.

Q103 Mr Jenkins: Early on in answer to Mr Trickett you mentioned that with innovation you do not know what the outcome will be. Is that normal? Do you find that if you are going to invest some money in a development with innovation you have no end objective? You may have a spin-off here and there, but do you think you can have an end objective with any programme you are financing?

Sir Robin Young: Of course; I certainly do. If you look at Figure 1 of the Report on page 5, you will see that the mission of CMI is "To enhance the competitiveness, productivity and entrepreneurship of the UK economy . . . by improving the effectiveness of knowledge exchange . . . and creating new ideas". If your mission is to create new ideas, I was only trying to explain that it is difficult to lay down in advance what those new ideas should be. The whole purpose of this thing is to create new ideas and new approaches.

Q104 Mr Jenkins: When most people go into research, do they not have an end objective? They may not get there in the end, but university research departments which you fund have an objective.

Sir Robin Young: I agree, but the distinction in this Report was that we produced high level aims, six of them, set out in paragraph 1.29 on page 17. As you have heard us describe, we discussed whether we could translate those high level aims into specific objectives and at the strong behest of the two universities doing the business, we were persuaded not. We had to have hands-on management instead of translation of these high level aims into objectives.

Q105 Mr Jenkins: Let me say from the start that I am quite pleased with the Report, I am quite pleased with the initiative, I think we are going in the right direction. What was surprising to me was the fact that we needed to go into this sort of collaboration. I appreciate that the MIT system, as you said, is one of the best and they have a very good track record and we want to graft that onto the British system which does not have the same track record in output. I totally agree with you. If this is one way of doing it, the sooner we get on with it the better and the sooner it can be fully developed, the better for Britain. However, it is not just the universities which are different. Surely MIT works in the American system and the British universities work in the British system. Have we done any work with regard to what makes America so conducive to these projects and what militates against them in Britain?

Sir Robin Young: We have and this is part of that work. The other thing I would add is whether we would want to imitate all aspects of the American system, if we thought that they were undesirable. The other initiatives we had in hand, before we got onto the CMI project, were also trying to stimulate entrepreneurship in universities and foster the commercialisation of university bred research and new ideas. We are trying lots of different ways of doing this and you will be familiar in other universities with lots of different ways of good and, we hope, productive government supported schemes. This is just another cut at it.

Q106 Mr Jenkins: That is where we are going wrong. In one or two instances that is where I think we are putting too much emphasis on the product rather than the process. This scheme gives us an opportunity to understand and underpin the process. We are not there to turn out the best product. What we are trying to do is develop

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individuals in the universities and change the emphasis in universities around how they turn out those individuals. Am I right in that?

Sir Robin Young: Yes.

Professor Kelly: Yes.

Q107 Mr Jenkins: I should like more emphasis on that aspect. I think that is going to be the mark of our success. How do we evaluate that success?

Professor Kelly: I am very pleased you have asked that question. In fact one of the real legacies of what we are doing is trying to measure the way in which we are changing culture. We are fully confident that the standard outputs in terms of presentations, patents and papers will be good, but the really important thing is whether we are changing people's behaviour. The knowledge integration communities which we talked about are where the whole idea is to get the first year undergraduate in with the research student, the master's student, the young lecturer, the senior professor, the young person from industry, the whole group in the community working together. We want to measure whether that is being more effective than, say, a Faraday partnership or an intermediate technology institute in Scotland or a centre of excellence in One NorthEast. What we have is a programme which joins the Sloane School of Management at MIT and the Judge Institute of Management in Cambridge coming into each of these programmes every quarter and analysing the way in which the interaction is occurring to see whether they are actually being more effective. We have one seminal set to compare it with, where this sort of thing is not going on. We are doing everything we can to compare the effectiveness of our teaching and our research as an integral part of our programme, precisely to give you the outputs you are looking for.

Q108 Mr Jenkins: Not the outputs I am looking for, but the outputs the programme was set up to deliver.

Professor Kelly: Yes.

Q109 Mr Jenkins: Once again we are back into product. We are back into understanding. As I see it, if the intellectual property rights continue to rest with Cambridge, in a few years' time Cambridge is going to become self-sufficient with all the revenue they are going to create and they will not be beating a path to the taxpayers' door to fund the institution. Are we talking about 15 or 20 years before they become a self-sufficient institution?

Professor Kelly: I do not know that because there are many other sources of income for that.

Q110 Mr Jenkins: Do not hold your breath and wait for it. Once again we are looking at projects and looking at how these people are set up to raise funds and raise capital to help these projects. I am more interested in when they have left universities, when they have left the research departments, when they then go to establish companies in their own right and have the management experience, have developed the ability to raise the funding to put that project in as a standing self-sufficient entrepreneur rather than

part of a large high profile team. What emphasis are you putting on that and how are you going to evaluate and measure when those people leave university and establish these companies?

Professor Kelly: There are several questions tied up in there. Our master's degrees are specifically designed to meet the particular challenge: how do we take people who are technical and give them the management skills and the confidence to go and set up their companies. We have 70 students, for example, in Cambridge this year going through a range of master's degrees with this material. They are being subject to the same level of assessment before, after and a year after, to see what is happening. You raise a much more serious point, which we are only just getting to grips with now. When you analyse the output from MIT, the people do not leave one day and set up a company the next. It is nearly always when they are about 30 and have spent the intervening period in two or three other small companies. One of the things we are grappling with now is whether we should be teaching serious amounts of entrepreneurship at the undergraduate and postgraduate level, or whether we should be developing highly focused, six-week programmes for people at the age of 30 when they want them. That is something we are tackling inside the organisation at the moment.

Q111 Mr Jenkins: How are you going to roll this out to other universities, this concept of the need to support people after they have left with these skills to find companies they wish to establish? Are universities happy with the fact that they have enough information and background support coming to them?

Mr Kingman: There is a lot more which can be done in this area and this was very much a theme of the Lambert review which the Chancellor commissioned and which recently reported. It is clear that there is a lot more of this kind of activity going on in British universities than there was five years ago, say. We wish to have funding systems which encourage more of this activity and we also want to have a broader environment which means that people who want to start these sorts of businesses can get the capital they need and so on. We have a whole range of programmes which are designed to achieve this.

Q112 Mr Jenkins: Sir Robin, what is your department doing? Is it doing anything at all to monitor these outcomes? I believe that part of our problem is the British economy. I believe that there are obstacles in the British economy which militate against these individuals establishing companies. If we have this scheme going, if we monitor these individuals when they leave, how is your department going to interact within this overall picture?

Sir Robin Young: I completely agree with your assessment and one of the many things which the CMI initiative is going to teach us is how better to monitor just this. It is the change of climate within the universities so as to encourage the entrepreneur activity and businesslike performance of highly trained technical people. We are already monitoring

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it, but perhaps not adequately. I have already mentioned the evaluation which is going to tell us how our current knowledge transfer initiatives are faring. Some of them will go to things you are less interested in, which are the actual products coming out, but some of them go to the cultural things you are talking about. You are aware in the past how we have measured things, how many patents we used, how many were exploited, how many spin-offs there were from universities. None of these things are perfect, but they are all indicators of a more commercial approach by people in universities than there used to be and the signs are pretty encouraging. None of these indicators is much use on its own. If you have a spin-off company which goes bust, it has not actually helped, but the fact that there is a spin-off company from university is a very good sign. We are looking at a whole raft of indicators to show the change of culture and climate, which is exactly what you want and which I hope the CMI will accelerate.

Q113 Mr Jenkins: On the complete range of activities undertaken under this programme, how many do you think will definitely continue after public funding is finished and how many do you think will fall by the wayside?

Professor Kelly: The vast majority will continue in some form or other. Let me tell you why. We have given a certain amount of detailed thinking to that at the time of commissioning any funding at all. If you take something like our course on Praxis, which came out of our National Competitiveness Network, “Could we put on a training course for practitioners in technology licensing?” that now has separate funding to become a self-sustained entity. All the stuff we are doing on educational reform, about the next generation of engineering education and bio-engineering, all of that will bed into the university. Finally, the major research teams will then embed themselves into the universities and be subject to commercial funding and other public funding. We have aimed to have as little as possible in precisely the situation of falling by the wayside. There is one exception to that. All of our work on metrics and assessment is something which will need an owner post-2006. I think the idea of pulling out at this point, just when we are on the foothills of the mountain, and leaving that as a programme which might have gone further, would be insane.

Mr Jenkins: Thank you for the advanced notice.

Q114 Mr Bacon: It says on page 23, paragraph 2.12, that you are in the process of appointing consultants to assess CMI. This Report was published on budget day, but it obviously took a while to draft. Is this appointing now done? Do you have consultants?

Sir Robin Young: We have.

Q115 Mr Bacon: Who are they?

Sir Robin Young: We have appointed SQW, it says here; not people I have met. We appointed them last week after competitive tender.

Q116 Mr Bacon: “SQW, it says here.” Who did the assessment of them?

Sir Robin Young: My department of course. They had a competitive tender and they won the bid and, as I mentioned earlier, they will report by October and we will publish their assessment.

Q117 Mr Bacon: Does it worry you that the last consultants you appointed, when you were concerned about CMI, are themselves no longer in business?

Sir Robin Young: I do not think there is a causal connection. We looked at the output of their report and we acted upon their reports, both of which were very useful in the progress of CMI.

Q118 Mr Bacon: I should like to return to the point Mr Osborne mentioned earlier about the Arthur Andersen report about CMI’s slowness. This is in paragraph 3.11 “... CMI’s slowness to spend and to develop effective systems for approving projects, and about its financial accountability and expertise”. This is not about funding pure research, is it, in the sense that you give money to a research council and tell them to find out whether there is life on Mars, or whatever it is? You do not necessarily expect a commercial payback. We all understand the difference between pure science and applied science. This is not the funding of pure science, is it? It is something else.

Sir Robin Young: No, indeed it is not. This is the funding of a project designed to produce things which will enhance UK’s innovation and productivity.

Q119 Mr Bacon: Right. In that case, one can understand you can, as it were—and I use the word advisedly—throw money at pure research projects without necessarily expecting some payback. Since the whole purpose of this is to get some sort of payback, it is just puzzling that there was so little in the way either of a plan, as to what the money would be used for, or, in place at the time the money was given, any method for assessing what the money was going to be used for. You referred earlier to the list of high level activities on page 17, which are fairly obvious and reasonably bland and you explained it was difficult to get down from that to something much, much more specific. However, the NAO says on page 18 “In our view, setting indicative objectives, which are used to help manage some innovative projects in the private sector, would have had a number of advantages” and it goes on to say what they are “... would have further clarified and drawn together ... expectations; and ... would have provided a good basis for managing and monitoring the initiative”. What that paragraph is saying is that there were not even indicative objectives, were there?

Sir Robin Young: Not at that stage.

Q120 Mr Bacon: Even though the money had been granted.

Sir Robin Young: As a *quid pro quo* for that, as that passage on page 18 says, after negotiation with both universities who were doing the work and because

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they urged us not to set objectives which would constrain that very new thinking which the whole project was designed to encourage—

Q121 Mr Bacon: Yes, but do you think “indicative objectives” would have constrained them?

Sir Robin Young: I certainly do and indeed, more to the point, so did they. In discussing that they exactly said that there was no point having these things and that was not the approach they wanted. In the end we accepted that, but then imposed very, very hands on controls in the offer letter which the Report says we did rather well to impose. We had two universities denying that we could properly set objectives without constraining just that innovation which the project was designed to encourage.

Q122 Mr Bacon: It goes back to what Mr Allan was saying earlier. This was a punt in fact. When he said it you denied it, but Professor Kelly was busy nodding. It was a punt on a world-class brand, a unique brand, was it not, Professor Kelly? MIT is unique on the planet, as you were saying earlier and therefore there was a unique opportunity and you had to have a unique approach and if that involved throwing out the Treasury’s own normal guidelines then that was appropriate in the circumstances.

Sir Robin Young: I do not think the word “punt” is right, even if Michael Kelly was nodding. With respect, I would use the table on page 26 on the use of funding to claim some credit that the use of funding was slower to begin with before the objectives were sorted. You were saying that we flung money at a project before the objectives were worked out. I would argue that Figure 15 is rather the opposite. Because we had not worked out objectives, we only allowed the CMI to proceed at a very, very slow pace in order to control just this point. I am not sure we can be accused, both of throwing money at it and making sure that the spend was very, very slow.

Q123 Mr Bacon: Fair enough. On page 15, paragraph 1.15, it says that even within the Treasury the negotiations were handled at a very high level and it refers to the possible competition from other European countries. Mr Kingman, were you aware of other European universities or governments or both who were aware that MIT was, as it were, shopping for a partner?

Mr Kingman: I was not in place at the time.

Q124 Mr Bacon: I meant you the Treasury.

Mr Kingman: The Treasury was certainly aware, not least from MIT, that they were talking to other countries.

Q125 Mr Bacon: Do you know who else they were talking to specifically? Which other universities in Europe were they talking to?

Mr Kingman: They certainly included Ireland, for example.

Q126 Mr Bacon: Which university in Ireland?

Mr Kingman: I am afraid I do not know.

Q127 Mr Bacon: You cannot name any universities: Heidelberg or wherever?

Professor Kelly: ETH Zurich, which is very strong and they now have an alliance on matters of sustainable energy only with them.

Q128 Mr Bacon: The cash flow forecasts are referred to on page 28. It says that CMI’s cash flow forecasts have been unrealistically high. Why do you think that was?

Professor Kelly: It comes back to the original point I made that if you put two great universities together and expect them to spend at an average rate from day one and produce results the next day, that was probably unrealistic at the time. If I had been there, I would have fought harder against it. You will notice that within 18 months that gap between expectation and reality was closed and that in fact was the sort of time needed; having built up research groups and other ventures, that was the time needed. I would certainly have insisted on a parabolic rather than a linear spend.

Q129 Mr Bacon: Are you fairly confident that if we were to look at this again in ten years’ time, we would all think it was stunning value for money and we would all be very glad we did it.

Professor Kelly: I have no doubt of that. I have a number of other examples where this has happened.

Q130 Mr Bacon: You mentioned culture and you were trying to examine the extent to which we were changing culture. Correct me if I am wrong, but you are from New Zealand originally.

Professor Kelly: I am indeed.

Q131 Mr Bacon: Why do you think that this country historically has been so bad at turning high quality academic performance into real world business applications?

Professor Kelly: I am not sure that my views would actually carry a lot of weight.

Q132 Mr Bacon: As an outsider.

Professor Kelly: As an outsider, I am tempted to say what I normally say when I am asked, so I hope you will forgive me if I do and that is that the people who went to New Zealand two centuries ago were two standard deviations above the average when it came to personal initiative and the ones who actually come back here to the UK are two standard deviations above that initiative again, so the basic idea is of “have a go” and not being constrained. My first night in a Cambridge college where someone said something had been like this since 1066 and it came down on me like a lead balloon. I am sorry, this is off the particular agenda here, but the ability not to take 600 years of history seriously and really go for it is a feature of young countries and it is shared with Australia, New Zealand and the United States.

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I have to say that over the period of my own lifetime, I have watched that starting to slip slightly in New Zealand as well, which is worrying.

Q133 Mr Bacon: Do you not actually think that there is plenty of innovation here, but too often it actually gets on a plane and goes over to North America. If you spend any time in North America, you see English accents disproportionately on the television when people are being interviewed about interesting new developments.

Professor Kelly: I would not go so far as to say that it is a zero sum gain, but there are many highly talented people from the Commonwealth old and new in this country reversing the same process. It is a global phenomenon and I think we do quite well on this front.

Q134 Mr Bacon: How much do you spend on air fares?

Professor Kelly: Me personally?

Q135 Mr Bacon: No, the Institute, the whole of CMI. You must have a lot of travel between the two Cambridges.

Professor Kelly: Yes, indeed. May I just do a little sum and tell you later?

Q136 Mr Bacon: Send us a note, please.

Professor Kelly: Yes, I will do that.²

Mr Field: And your air miles and your Nectar points.

Q137 Mr Williams: Sir Robin is here because his department was in charge of stage two. Why is the Second Permanent Secretary not here who was in charge of stage one?

Mr Kingman: I am afraid he has retired.

Q138 Mr Williams: That makes no difference to us. We could have asked for him back. In that case, why is his successor not here?

Mr Kingman: His successor is at present on holiday.

Q139 Mr Williams: I am sure that is an inconvenience which could have been reorganised, had he been asked at the appropriate time. You said that in 1998 the Treasury became aware that MIT was looking for a European partnership. How did you become aware?

Mr Kingman: I believe that we became aware through contacts with academics working in this country but with MIT connections.

Q140 Mr Williams: But they did not tell DTI, Sir Robin?

Sir Robin Young: I think not.

Q141 Mr Williams: At what stage did you make DTI aware?

Mr Kingman: DTI were not formally made aware of these negotiations until very shortly before the announcement was made.

Q142 Mr Williams: Which announcement?

Mr Kingman: The announcement of the end of stage one in 1999.

Q143 Mr Williams: At the end?

Mr Kingman: Yes.

Q144 Mr Williams: In other words, you went all the way through stage one without even notifying your colleagues in DTI.

Mr Kingman: That is correct.

Q145 Mr Williams: Was the Secretary of State not even involved?

Mr Kingman: No, I believe not.

Q146 Mr Williams: Not even notified.

Mr Kingman: I believe not.

Q147 Mr Williams: That is rather unusual is it not? They are the department which are going to bear ultimate accountability for it in the House of Commons and they are the people who are going to have to be judged on value for money and they are the people who are going to have to account for whether the £68 million was right. This is rather arrogant of the Treasury, is it not, just to do its own thing secretly? Were any other ministers involved, anyone at all?

Mr Kingman: I had a go at answering this question earlier. I have to say that I have studied the files and talked to those involved and I do not believe there is any trace of arrogance amongst those who were attempting to conduct this negotiation. On the contrary, I think we were very well aware of the strength of MIT's negotiating position.

Q148 Mr Williams: No, that is not so. You were afraid DTI would mess it up. Otherwise, why did you not tell your colleagues? I used to be an industry minister and I think this is a fascinating project. If I were an industry minister now I would want to know about it and I would want to know about it early on. I expect the Secretary of State would have liked to know about it early on. So why did Treasury keep it so close to its chest? It could have notified the Secretary of State and then have said they were going to take the lead in this. But to keep it from the Secretary of State sounds rather uncomradely in terms of accountability at ministerial level, does it not?

Mr Kingman: I can only say that the judgment which was taken at the time by those involved was that in the nature of this negotiation we needed to be able to act quickly. The other thing I would say is that it was clear at that time that if we were going to participate in this venture the Treasury was going to

² *Note by witness:* The percentage spend on all travel and subsistence claimed from DTI to date is 9.5%. The travel element of any claim for travel and subsistence is approximately half of all claims ie 5%. The percentage spend is decreasing with time, as the high levels at the set-up stage drops and is overtaken by increasing spend on the projects.

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need to put money onto the table to do it. It would not have been realistic or reasonable to have asked the DTI to fund this out of the resources which they then had available for this kind of activity.

Q149 Mr Williams: So they did not have to meet the £65 million?

Mr Kingman: No.

Q150 Mr Williams: It is your £65 million.

Mr Kingman: That is correct.

Q151 Mr Williams: Who is going to be accountable to Parliament for it?

Mr Kingman: Sir Robin is the accounting officer for the money, because it was passed to his department.

Q152 Mr Williams: I see. So if it goes wrong he carries the can and you made the decision.

Mr Kingman: There was a two-stage process, which is described in the Report, and the NAO were good enough to say they think that process was sensible.

Q153 Mr Williams: By the time it landed on their desk, there was no way DTI dared back out of it, was there and be accused of having lost something of this sort? They were literally over a barrel. To my mind this is an utterly abnormal way in which to conduct government.

Mr Kingman: This was an unusual process, that is clear. Occasionally—

Q154 Mr Williams: Have you ever come across a process like it before?

Mr Kingman: Not directly equivalent.

Q155 Mr Williams: Have you, Sir John?

Sir John Bourn: No, I have not come across anything exactly like this.

Q156 Mr Williams: And you have been around a long, long time, like I have. It would not be too much to say this was a bit of a precedent; a sort of constitutional precedent actually, was it not, in terms of the role of the Treasury in relation to other departments? It takes cross-cutting to a new dimension. You do the cutting and they get cross when they find out.

Sir Robin Young: Perhaps I might come in here. It is true that we and the Treasury have been working very closely on the whole science and innovation agenda. Although it would have been possible to have tipped us off about what was going on here, we would happily have agreed that the prize was well worth having and if it worked at that level, so be it.

Q157 Mr Williams: But Sir Robin, hand on heart, as an individual, were you not a bit miffed when you found out you had been outside it all and they had not entrusted you with it?

Sir Robin Young: A lesser mortal might have felt that emotion. In truth, trying to look at the bottom line, this was a prize well worth grabbing.

Q158 Mr Williams: I agree with that. I am just absolutely puzzled at the politics of it, to be honest, in terms of operational politics. It seems no-one in this room has ever come across such a situation before. Can we just clarify this intellectual property situation? I understand that each project has a leader in Boston and a leader in Cambridge.

Professor Kelly: Correct.

Q159 Mr Williams: Take the aircraft project. Each has a leader. Where is the actual work being done? Is it being done at both?

Professor Kelly: Yes; yes, both. The number is approximately the same. I forget exactly, but it is about 11 young researchers working in Cambridge and an equivalent number at MIT.

Q160 Mr Williams: You kept differentiating between the ownership of the intellectual property and the right to exploit the intellectual property.

Professor Kelly: Yes, that is right.

Q161 Mr Williams: Why? If it is split between the two of you evenly, that means everything automatically goes between the two, does it not?

Professor Kelly: The point here is that this was negotiated in the early stages as justification for some of the questions which have been asked here today. This is raising the game, but is also, I have to say, raising the game at MIT in the process. We think that between us we are doing things which neither of us could do on our own. The point is that because the money is coming from this end, so should the first call on the proceeds of the discoveries. MIT have entered into that spirit.

Q162 Mr Williams: Obviously if that comes off, there is mega money in it which makes the stake look derisory; if it comes off.

Professor Kelly: Yes.

Q163 Mr Williams: I assume that there are other people researching this area as well; obviously no one is alone. It may well be that it surfaces somewhere else rather than out of your organisation.

Professor Kelly: I would put the challenge back to find a couple of other universities of comparable status working together who could actually outflank us. If you take, for example, one other group which we did not include in our silent aircraft project, again a resource issue, that was environmental pollution as opposed to the noise pollution. There is a large agreement between British Aerospace and Loughborough. For one of my sins I happen to be the Vice-President of the Institute of Physics and the President is the Vice-Chancellor of Loughborough and we have had some initial discussions about whether those two programmes could be brought together. Our IP regime allows us to bring some of these extra consortia together. If we do not lose our nerve, we have the possibility of crafting the place where the next generation of civil aircraft is put together and that is the prize.

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Q164 Mr Williams: What is to stop seepage on the other side of the Atlantic? How can you be sure that what is coming out of your project will not somehow, mysteriously, surface with a major aircraft company or someone of that sort on the other side of the Atlantic?

Professor Kelly: Boeing for example have a large presence in this country and are negotiating to join the consortium as we speak. We want everybody. If this is the place where the next generation of civil aircraft is really put together, to have a 50% share in that from this activity is just well worth it.

Q165 Mr Williams: I agree entirely. That is what I said at the start. I am very excited.

Professor Kelly: That is the image. That is the vision that we are encouraging the participants to take.

Q166 Mr Williams: You said it is a snip as long as it happens.

Professor Kelly: Yes.

Q167 Mr Williams: If it does not happen, it was not such a snip.

Professor Kelly: Correct.

Q168 Mr Williams: Coming back to the remote possibility—and we hope it is remote—that it does not happen, the £68 million was really arrived at in a most un-Treasury-like fashion, was it not? You would never tolerate another department behaving in that way.

Mr Kingman: It was arrived at in a very Treasury-like fashion, which was that we negotiated very hard and got it down from \$200 million to \$100 million.

Q169 Mr Williams: Which is where they started. They come in to the negotiation at the top and say they want this, knowing you are going to negotiate and they end up going back to what they had as their fallback figure, which was probably their basic bottom line anyhow, which was the Singapore cost. You were just led by your noses to the £65 million, were you not?

Mr Kingman: The judgment we had to make and the Chancellor had to make in the end was whether or not he was willing to do a partnership with MIT on the basis of the deal which was available. The answer to that question at \$200 million was certainly no. The answer to that question at around \$100 million was yes.

Q170 Mr Allan: I am interested to know who is going to make decisions on future funding. It has been described as an experiment in American methodology, including American forms of political decision making which is “I’ll find \$100 million of federal funding to put into your local university”, which has been more their style of doing things than ours. Is the money now for future funding with the Treasury or with the DTI? Who is going to decide, if they come back for more?

Mr Kingman: That decision will principally be for the Office of Science and Technology who have a good deal more money available for this kind of

activity than they have done historically. We are in the process of constructing, with other departments, a ten-year plan for science and innovation. That will be a question about the kinds of funding at a higher level than that, but of course OST may well want to come to us and say that amongst other things they would like to fund CMI. It is possible.

Q171 Mr Allan: The extraordinary position of the Chancellor apparently being personally involved in this kind of deal making is now gone.

Mr Kingman: Correct.

Q172 Mr Allan: This is part of the general OST funding in DTI.

Mr Kingman: Correct.

Q173 Mr Allan: DTI are free to decide that this was an American cuckoo in the nest, it has not worked, or that it is a wonderfully successful project and it needs more. Sir Robin, are you confident that you would be entirely free figuratively to drop the Chancellor’s baby if you so chose?

Sir Robin Young: We are evaluating all our knowledge transfer programmes, including the CMI. That evaluation will come out in October. As the results come out, they will inform our discussions with the Treasury on our preferred make-up of the future spending programme under the ten-year science and innovation strategy. Certainly I feel under no instructions whatever to have another CMI, a daughter of CMI or an OMI. I do not feel under any such pressure. What we have been asked to do is evaluate what is working best in this really important aspect of the competitiveness agenda, namely innovation.

Q174 Mr Bacon: Mr Kingman, it says in your CV “John Kingman . . . has overall responsibility in the Treasury for . . . the spending programmes of the Department of Trade and Industry”.

Mr Kingman: Yes.

Q175 Mr Bacon: Is that correct?

Mr Kingman: It is.

Q176 Mr Bacon: So ultimately it comes down to you.

Mr Kingman: I do not micro-manage the decisions which OST take on how to allocate their funding. What was the case in 1998 was that there were not substantial funding streams for this kind of activity. That is something on which a good deal has been done in recent years.

Q177 Mr Bacon: Given the Chancellor’s interest in this programme, you are not going to stop the funding if they express interest in continuing.

Mr Kingman: That decision is one for OST.

Q178 Mr Bacon: Sir Robin, at any stage, given that this was so unusual, one might have thought that an accounting officer would have said “Hang on a minute. This is unusual” and sought a direction from a minister to authorise the expenditure. Did any

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accounting officer, either in your department or in the Treasury or elsewhere, at any stage, seek a direction from any minister for this expenditure?

Sir Robin Young: No, but what we did do, my predecessors and myself when I arrived, was to keep on insisting on this very intrusive management style, which the Report rightly says we had to adopt in the absence of clear objectives and measurement. Had there been measurement and objectives, it would have been straightforward; we would have adopted our usual stance. In this case, because there was not and we were persuaded by the partners that there could not be at that early stage, we insisted on very, very hands-on oversight.

Q179 Mr Osborne: Picking up on what Mr Williams was talking about, what are the benefits to the US economy of the CMI project?

Professor Kelly: There are no direct benefits planned, other than that perhaps some of the researchers whom we have funded for things that we want going on and getting subsequent employment in the US. It is that indirect form as opposed to any direct form.

Q180 Mr Osborne: Half the money is spent in the United States and a lot of the people working on it are American citizens. You have American companies like Boeing being involved. There must be some benefit to the US economy from this project as well.

Professor Kelly: I do not have a detailed figure for that. Certainly the answer is not zero, but I do not have a detailed sum. That is part of the price to get the prize we are after.

Q181 Mr Osborne: You keep talking about the two best universities in the world and so on—which obviously offends me as someone who went to Oxford, but there we go. Does the US Government not want to put some money into these two best universities in the world? You say they want to link up with Cambridge. Is that not a great prize for them?

Professor Kelly: I do not think that they feel the same compulsion to go global at this stage from a federal point of view. Certainly part of MIT's own agenda is to try to become a global player in higher education, so this fits neatly in with their scheme, but I do not think there is any federal drive. The fact that we might try to touch others for funds is something which we will try in the course of events.

Q182 Mr Osborne: Your investigations into the silent aircraft. A huge amount of American research is funded by the US Pentagon. Have you approached the US military for support?

Professor Kelly: The whole point about this whole programme is that it is designed around aircraft for something like 300 passengers. The whole thing is aimed at the civil aircraft market. I have worked in research in industry as well, in fact my main piece of research was for guided weapons, but all the exploitation is in automobiles now for car radar. This sort of thing happens all the time and it would

be pointless and folly to try to stop it. We will be trying to see whether we can make any interactions going forward slightly more symmetric.

Q183 Mr Osborne: What does that mean in English?

Professor Kelly: Try to see whether we can attract some form of federal money into some aspects. We will try personally at the ground level to look at that.

Q184 Mr Osborne: What kind of federal money?

Professor Kelly: I am talking slightly out of turn here, because I would have to go to the board, but there is at the moment a major start-up around homeland security and I know that a number of our programmes associated with the next generation of communications and internet have spin-off activities which will be of great interest to them and they would have both the best of Cambridge and the best of MIT linked in. In terms of the two universities—and remember that there are many agendas in this process—they may well decide . . .

Q185 Mr Osborne: A final question to Sir Robin. Have you found that other universities and the rest of the higher education world have been enthusiastic supporters of the CMI project?

Sir Robin Young: They have been won round, though, as you obviously realise, there was a certain amount of envy to begin with. One reason that it was important that Treasury negotiated successfully, was so as to ensure that an explicit result of this would be a pan-university national competitiveness network, which now functions very well and where all our major research universities and all regional development agencies and other relevant bodies come together to learn the lessons from CMI.

Q186 Mr Osborne: I helped initiate this investigation by the Comptroller and Auditor General. I had never heard of CMI until various people in the higher education sector sent me all sorts of documentation and told me to refer it to the Comptroller and Auditor General. It is an indicator of a broad level of acceptance in the higher education sector. What proportion of the total amount you spend on knowledge exchange initiatives goes to Cambridge University?

Sir Robin Young: I do not have that figure, but I can certainly give it to the Committee.³ I would hope that some of the objections which you got earlier from universities which are not Cambridge will have at least been dissipated by the success of the national competitiveness network.

³ *Note by witness:* For those Knowledge Transfer programmes set out in figure 13 in Page 22 of the NAO Report where funding has already been allocated, the University of Cambridge has been awarded £4,862,500 (which includes a pro-rata share of a collaborative HEIF project). This is 2.64% of the funding of £184.5m that has been allocated to date.

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Q187 Chairman: Professor Kelly, last question for you. In your view what is the single greatest achievement of CMI to date? Given that you told us earlier that this was the most exciting project on the planet, it had better be a good answer.

Professor Kelly: In this area. I think it is the fact that we now have a number of examples in our programmes which we have just started, the silent aircraft, three or four of them, where we have identified something which neither Cambridge nor MIT could do on their own and put this together. So everybody on both sides thinks there is a prize there which is much higher than they would have aimed at from either side. The idea of a global or an Anglo-American alliance of simple excellence to get new things—and all of our research and education is about a consideration of use, it is the things where we can identify major programmes of benefit to the UK—is the biggest prize to date.

Chairman: Gentlemen, that concludes our hearing. We are very grateful to you. As my colleague Mr Williams said, and I think we all agree, this is a fascinating project. However, I am sure we shall want to deal in our report with the unusual gestation of this project. I do not believe that these Treasury rules, which have apparently been set aside, are just a mere bureaucratic mechanism. I think they are very useful for ensuring that we achieve objectives which we want. A lot of money has been wasted in the past on blue sky research and the role of the DTI at a very early stage would be important for focusing this project on getting real practical benefits for British industry. We can return to this in our report.

Mr Field: What we also want to highlight is the importance of encouraging entrepreneurial skill in the public sector.

Chairman: Exactly. Thank you, Mr Field, thank you gentlemen.

 Supplementary memorandum submitted by the Department of Trade and Industry

QUESTIONS 40–48 (JON TRICKETT): CMI AND STATE AIDS

Are payments to CMI considered State Aids?

The PAC question assumed that because CMI was a limited company, payments could be caught by State Aid rules. However, whether or not there is a State Aid issue depends on the use to which the money is put rather than the nature of the organisation to which it is paid.

Was State Aid issue considered by Department?

As part of the CMI Offer Letter negotiations in early 2000, the State Aid policy team and also the Department's lawyers considered the question of whether State Aid regulations would affect CMI.

What does the Community Framework for State Aid for Research & Development say?

Public financing of R & D activities by public higher education establishments is not normally covered by Article 87(1), and the same applies where the results of the research are made available to community industry on a non-discriminatory basis.

How does this affect CMI?

The funding arrangements for CMI do not constitute a notifiable aid.

Although CMI is technically a company limited by guarantee, it is a non-profit making higher education and research establishment. Its sole owners are Cambridge University and MIT. Some research will be carried out in collaboration with industry, but any results which do not give rise to IPR will be widely disseminated, and any IPR rights to the R & D results are allocated to CMI through the legal framework that has been formally agreed.

Private sector partners pay their due share of costs and any returns are either available to all, fully paid for by the private sector parties, or accepted at less than full value because of the perceived longer-term benefits ie better skilled managers, industrial researchers.

22 April 2004
