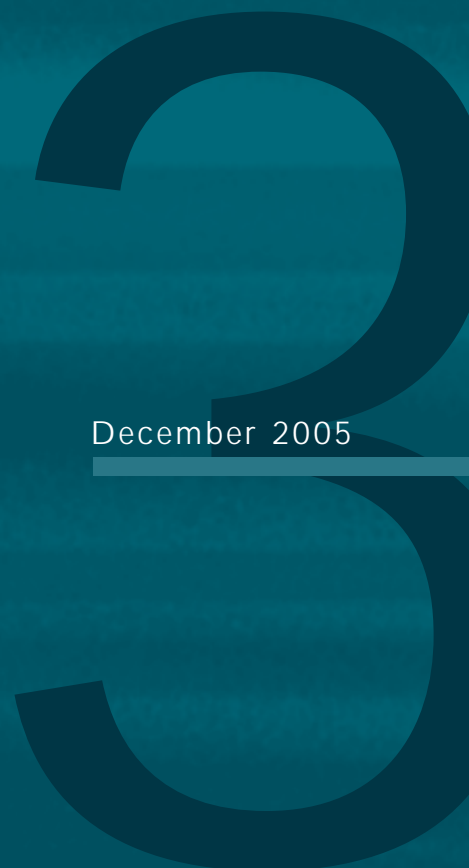


Content Advisory Board (CAB)

Report to the Secretary of State

Report no. 3

December 2005



CAB members

Owen Lynch, Becta (Chair)

John Anderson, DENI
Doug Brown, DfES
Dan Buckley, Cambridge Education
Keith Davies, Welsh Assembly
Jon Gamble, Learning and Skills Council
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David Worlock, EPS Ltd

My thanks to the private sector, educational and BBC colleagues for their engagement and advice. It should be noted that representatives of DCMS, DfES and DTI are not required to approve CAB's recommendations.

Owen Lynch, Chair, Content Advisory Board

**CAB secretariat**

Becta, supported by Cambridge Economic Policy Associates (CEPA)

CAB terms of reference

To advise the Secretary of State for Education and Skills on the performance of Curriculum Online in relation to the development of a comprehensive range of online digital learning resources for schools...

Within this, the specific objectives are:

- to undertake gap analysis of the range, breadth and depth of curriculum subject areas covered (Objective 1)
- to consult on a regular basis with the independent market analyst (appointment by the Secretary of State) on matters relating to the development of the digital content market before making recommendations (Objective 2)
- to consult on relevant public and private sector content commissioning plans and expenditure (Objective 3)
- to regularly assess the impact of e-Learning Credits (possibly by market category or subject) in stimulating the market (Objective 4)
- to monitor public sector involvement in Curriculum Online (Objective 5)
- to consider any matter that inhibits the effective delivery of Curriculum Online (Objective 6).

This is the third report by the Content Advisory Board (CAB) to the Secretary of State. It reviews the current state of the digital content market, with particular reference to Curriculum Online, and provides observations and recommendations on the BBC digital curriculum service and other work carried out in 2005 on behalf of CAB.

Since January 2005, CAB has carried out its business through a series of formal and informal meetings to discuss research findings and analysis undertaken by Becta and other organisations. It has assessed the impact of e-learning credits (eLCs) on the market and discussed the strategic review of Curriculum Online being undertaken by Becta. CAB has also continued to review the development of the BBC's digital curriculum service and the BBC's approach to developing a service that is distinctive, innovative and complementary to the commercial and public sector market. CAB has also consulted on work relating to the quality of e-learning resources, and on gaps in provision and the opportunities these provide.

Key points to note about the wider policy context of the report include:

- The extension of eLC funding to 2006–7 and 2007–8. The level of funding being made available to schools has been maintained at £100m in each year. However, the ring-fenced element (eLCs) is at a lower level: £75m in 2006–7 and £50m in 2007–8.
- The launch of the BBC digital curriculum service in January 2006, amid expressions of increasing concern from the private sector about lack of complementarity and distinctiveness.
- The publication of the e-strategy, 'Harnessing technology', and the Education White Paper in the period since the second CAB report was submitted to the Secretary of State.

The structure of the report is as follows.

- Section 2 provides a summary of the report and key recommendations.
- Section 3 reviews the current state of the market with particular reference to eLC returns and Curriculum Online.
- Section 4 provides CAB's present views and observations on the BBC digital curriculum service.
- Section 5 summarises other work carried out on behalf of CAB since the last report, including work on issues relating to innovation, quality and accessibility.

While CAB's recommendations focus on the schools sector, all actions will be considered within the ambit of the system-wide requirements of the e-strategy.

2.1 Current state of the market (Section 3)

The analysis in this paper supports the conclusions presented to the Secretary of State in CAB's first report: that eLCs have had a major impact on sales of digital content and a positive but limited impact on investment and innovation. In particular:

- The evidence indicates that there was a considerable increase in sales between academic years 2002–3 and 2003–4, and this has largely been driven by eLCs. Sales in 2004–5 look slightly lower than they were in 2003–4 and appear to be less than the eLC allocation of £100m, possibly suggesting a degree of saturation in schools (which may be temporary) or other budgetary, logistic or training pressures.
- eLCs appear to have had the effect of attracting a large number of new, smaller, companies into the market. But we have not found evidence of a major reduction in the proportion of sales accounted for by the larger suppliers or the most popular products.
- eLCs have had a positive impact on investment, although this appears to have reduced over time – with some indication of lower levels of investment in the last academic year.
- Although eLCs may have had a significant impact on promoting awareness and use of digital content in the classroom, they have probably not led to a step change in the level of innovation embodied in digital content used in the classroom.

In the light of this analysis and the recent announcement by the Schools Minister, Lord Adonis, of additional eLCs (with the ring-fenced element at a reduced and declining level), we have reviewed our observations from earlier papers on both eLC eligibility rules and also issues relating to procurement and commissioning. Clearly, our recommendations should be viewed in light of the fact that the Department for Education and Skills (DfES) and the Department for Culture, Media and Sport (DCMS) may decide changes in their policy for the future with regard to both the BBC digital curriculum service and eLCs.

Recommendation 1 – eLCs and procurement

The Schools Minister's response to the recommendations in our second report on the 80:20 and eLC eligibility rules clarified that no substantial changes would be made, given the reduction in ring-fenced eLCs. In light of the Minister's response to our previous recommendations, we consider that registration, sales returns and compliance processes should be further enhanced. We also take the view that guidance on the interpretation of the rules will need to be developed to provide greater clarity.

The Schools Minister has also noted the relationship between eLCs and the BBC digital curriculum service. This relationship will change with the reduction in ring-fenced eLCs and the anticipated phasing out of this funding initiative. In addition, there is uncertainty

regarding plans for the BBC digital curriculum service beyond 2008. CAB believes that work needs to be undertaken to explore how Government can best maximise the value of its existing investment through support for improved procurement methods and use. These changes suggest the need for a transition to a new policy environment. More strategic purchasing will have the impact of smoothing the transition from ring-fenced funding for digital learning resources (eLCs) to non-ringfenced funding, whenever that transition occurs. This may help to further reduce the risk of 'cliff edge' effects on sales in a post-eLC environment.

Therefore CAB sets out the following recommendations:

- That DfES reach an early agreement with Becta to
 - further enhance the Curriculum Online registration and compliance procedures
 - and (drawing attention to our earlier suggestion) where there is reasonable evidence of misuse, support Becta in requesting a written statement from one of the officers of the company affirming that its sales comply with the rules.
- That Becta develop appropriate guidance on the interpretation of the rules.
- That Becta review how information on eLC returns is collected, maintained and reported in a manner that ensures the confidentiality of commercially sensitive information.
- Addressing the issue of leakage, that the DfES (a) consider how it can promote more effective and discerning spending of eLCs **and** (b) investigate how expenditure can be checked without imposing undue burdens on schools.
- That the DfES (a) provide early clarification regarding the extension or discontinuation of eLCs post 2008 **and** (b) seek early clarification of the BBC's intentions regarding the future of the digital curriculum service beyond 2008.
- That Becta build on existing activity in order to encourage best practice in procurement and use, to ease the transition to a post-eLC environment. In particular, Becta should take forward its self-review framework for this purpose. The Becta self-review framework provides school leaders with the opportunity to self-review their educational ICT resource procurement strategy and usage and we recommend this as a key means of enhancing procurement decisions.

2.2 BBC digital curriculum service (Section 4)

CAB has continued to engage regularly with the BBC since our last report. The BBC has presented progress reports at CAB's quarterly meetings, and in June 2005 CAB also viewed some early prototypes of digital curriculum service products. More recently, we have established a working group to engage with the BBC outside of the formal CAB meetings. In assessing the extent to which the BBC is meeting the DCMS requirements, we recognise that our analysis is based on only a partial understanding of the detail of the product, and that the BBC may have already made changes reflecting our earlier feedback to them.

In summary, our judgement is that, from what we have observed so far, CAB does not have an assurance that the digital curriculum service is likely to meet the DCMS conditions that require it to be 'distinctive from and complementary to services provided by the commercial sector' while being innovative. In our feedback to the BBC, we noted in particular our concern that the digital curriculum service does not presently appear to complement the services provided by the commercial sector, and a degree of disappointment with the extent to which the prototypes demonstrated genuine technological or pedagogical experimentation. It is also a concern that the approval conditions might limit unduly the ability of the BBC to revise, refine and improve the service - for instance if it curtails the BBC's freedom to change the scope of coverage or to extend or revise the roll-out timescale.

CAB has noted that a particular difficulty in the dialogue between the BBC and the private sector is the result of a lack of any clear definition for complementarity and distinctiveness. CAB has also acknowledged the significant production challenges facing the BBC due to the shortening of the production period as a result of the time required to

complete the approval process. We further note that these additional factors increase the difficulty for the BBC in terms of its ability to achieve complementarity, distinctiveness and innovation.

In developing our recommendations, CAB has been particularly aware of the changing medium-term policy environment. Indeed, we consider that we are rapidly approaching a crossroads in terms of policy in this area. CAB believes that the underlying issues related to the BBC digital curriculum service will result in further attrition between the BBC and industry and could lead to further action under European Commission processes. We therefore consider it essential that the issues surrounding the BBC digital curriculum service be resolved as a matter of urgency.

Recommendation 2 – Review of the BBC digital curriculum service

Given our concern about the progress of the BBC's digital curriculum service in meeting the DCMS conditions, CAB recommends that:

- an early review of the service be taken forward, and, furthermore, that the review determined by DCMS (as set out in condition 18 of the DCMS approval conditions¹) should be carried out at the earliest possible opportunity after launch.
- the review be expeditious and completed by September 2006, as we understand that prior to this date the BBC will not be significantly marketing the service.
- the terms of reference should allow for a fundamental review – including the possibility of significant changes to the scope, coverage and timing of the service; the review should also take note of the changes in ICT education policy and practice since the original proposals were developed.

Recommendation 3 – Complementarity, marketing and information exchange

CAB considers that the inability to resolve the issue of complementarity of the BBC digital curriculum service and private sector provision would be detrimental to the interests of the educational community. We are also concerned about the relative lack of information available to the commercial sector, and express a similar concern about the lack of relevant commercial information available to the BBC to support judgements about complementarity in its planning. Therefore CAB recommends that:

- a joint marketing strategy should be developed between the BBC, DfES and the commercial sector, with shared messages on complementarity and resource discovery. These messages could be provided with digital curriculum resources and, for example, be included in supporting materials to give a clear and consistent message about their complementarity to other types of curriculum resources that schools might also use.
- the BBC digital curriculum service should be encouraged to support wider messages on the embedding of effective ICT practices in education.
- BBC digital curriculum resources should be discoverable via the Curriculum Online portal as well as from the BBC website.
- the BBC set up a formal process to demonstrate to the commercial sector new prototypes and resources in advance of their launch, and provide additional information on its plans.
- the Secretary of State endorse the creation of a formal and confidential information sharing process for the BBC and commercial sector to support the resolution of complementarity issues. This should be led by the DTI and developed in close collaboration with Becta. CAB is supportive of the early discussions which have already taken place on the development of such a process.

Recommendation 4 – Interoperability

As part of our discussions with the BBC, CAB members have noted the BBC's initial dialogue on interoperability issues with the commercial sector and Becta, but we still have concerns about the interoperability of the BBC's resources with existing learning platforms and systems. CAB has also noted that, as the current conditions mean that user

¹ The Secretary of State will review the service within two years of the launch of the service, for the purpose of satisfying herself that the BBC is acting in accordance with the facts and assurances on the basis of which the approval was given and these conditions have been complied with. The review will include an independent assessment, encompassing an assessment of the service's impact on the market, and a public consultation. DfES and OFCOM will have a role in the review as appropriate. Its conclusions will contribute to the wider Charter review process.

data will not be retained by the BBC's virtual learning environment (VLE), the educational value of the service could be affected. Therefore CAB recommends that:

- The BBC address this issue by publishing as a matter of urgency relevant details on interoperability, resource discovery, IPR issues, accessibility and other related matters. This work should be carried forward within the ambit of the framework of open standards and specifications that Becta is developing, with any areas of dispute referred to Becta for an independent view.
- The issue regarding retention of user data by the BBC VLE should be included in the remit of the BBC digital curriculum service review (see recommendation 2).

2.3 Innovation in a changing public and private sector market

CAB advises that future activity and funding designed to support innovation in product and practice should be situated in the broader context of curricular and pedagogic development. A point that emerges in relation to this is the importance of making the commercial sector (and the BBC) aware of curriculum, pedagogic and technical developments that have an impact on their activity. This is particularly important to the extent that these developments result in new digital learning resources, and to the extent that they might stimulate demand for new products and practice.

Recommendation 5 – Approaches to gap and opportunity analysis and innovation

CAB believes that curriculum and pedagogic development should contribute to the development and promotion of innovative and effective product and practice. CAB notes that the development and promotion of innovation should also be seen in the context of smoothing market transition to a post-eLC environment.

QCA and the National Strategies have a significant role in curricular and pedagogic development and, as a consequence, should influence the e-learning resource market. The National Strategies are also providers of free content for use in the classroom. There is a need, in CAB's view, to ensure that government agencies and initiatives disseminate information to the market about their activities. Knowledge of the direction of curriculum and pedagogic development, for example, would help to establish gaps, and thus identify opportunities for suppliers. Therefore CAB recommends that the DfES in conjunction with its agencies and partners:

- develop a dialogue with suppliers to ensure that they have access to intelligence which will help them to be responsive to educational change.
- disseminate knowledge of their activities which could impact on the market, in a timely manner.
- consider and co-ordinate the range of actions which could foster innovative and effective product and practice (this should include Becta, QCA, the National Strategies and those involved in training and CPD, such as the TDA and NCSL).

Recommendation 6 – Technical standards, accessibility and inclusivity

CAB has explored issues around technical standards, accessibility and inclusivity. CAB notes the importance of compliance with open standards and specifications across Government and its agencies. We also recognise that further support for suppliers and users on accessibility and inclusion is essential. There is clearly a need to promote accessibility and inclusion and to increase knowledge and understanding of legislation and its implications. Therefore CAB recommends:

- that the DfES establish approaches to ensure wider adoption of:
 - generic standards and specifications required by education across other government departments.
 - educational standards by industry and intermediaries for schools – for example, through Cabinet Office strategies such as the e-Government Interoperability Framework (eGIF). This is crucial to enabling systems integration that underpins the vision of the e-strategy.
- that the DfES create a public-private sector working group remitted to explore interpretations and implications of the Special Educational Needs and Disability Act (SENDA) for suppliers and users of educational ICT resources, and to give particular consideration to the concept of 'reasonable adjustment'. The findings of the working group would be used to develop appropriate guidance for both suppliers and users.

This section is divided into three parts. In the first part we give an update to the analysis from CAB Report 1 on the state of the market and the impact of eLCs – focusing particularly on the size and composition of market spend and providing some observations on company investment intentions. The second part summarises the evidence available from the National Centre for Social Research (NatCen) evaluation work on the impact of the Curriculum Online programme as a whole. The third part provides recommendations and observations on various policy issues – particularly in relation to eLC rules and the procurement of digital content.

3.1 State of the market

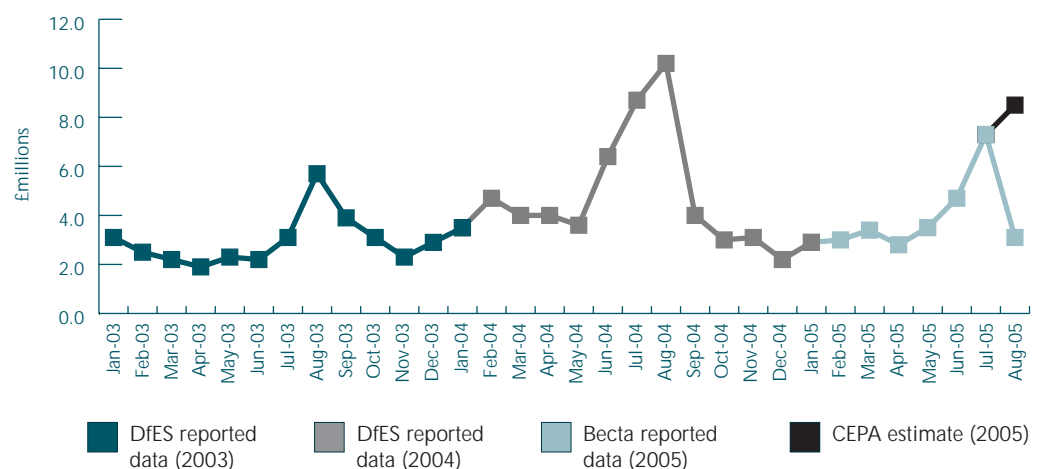
Section 2.1 of the first CAB report presented the evidence then available to CAB on the impact on the digital content market of eLCs since their introduction in January 2003. This section presents the results of an updated analysis that captures the impact of eLCs up to the end of the 2004–5 academic year.

3.1.1 Impact of eLCs on the size of the market

In assessing the impact of eLCs, we begin by considering changes in the size of the market. We have again analysed eLC sales returns, survey information and findings from a consultation with a number of private sector digital content suppliers. As we have noted before, the results should be treated with a reasonable degree of caution – given the incompleteness of survey information².

Figure 1 shows the monthly level of spend on digital content – as measured by eLC returns provided by the suppliers to DfES/Becta.

Figure1: Monthly sales returns submitted to DfES/Becta³



² For example, summing the monthly levels in Figures 1 and 2 gives academic year totals that are less than the estimates of the market size range presented above. This is due to an under-estimation of spend resulting from inaccuracy of supplier and product data submitted to the DfES and Becta.

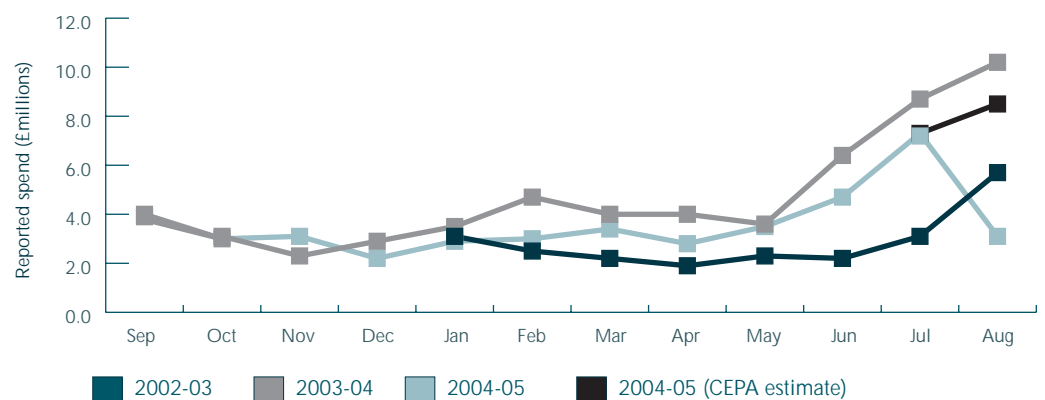
³ Becta has been collating and analysing suppliers' sales returns since January 2005.

In addition to the reported level of spend for August 2005, we have estimated the level of spend based on the spend pattern observed last year.⁴ This is because there has been a dramatic and unexpected drop-off in the total level of spend reported by suppliers for August 2005. We are uncertain whether the reported fall is a genuine decrease in spend or whether it reflects concerns among suppliers of the implications of the Freedom of Information Act (FoIA) on Becta's collection and use of historic sales information. We believe that there may be a significant risk that, because of the commercial sensitivity of sales data, some suppliers have decided to withhold or restrict the level of sales they report. This will clearly have real implications for the ability of CAB and others to use this information to make judgements about the size of the market and composition of sales in future. Further work is required to understand the causes of the observed drop-off in the total level of reported spend.

Seasonality

eLCs have had a significant impact on the seasonality of digital content spend by schools and teachers. Prior to the introduction of eLCs, we understand that there was an annual upturn in spend in the period January–March, following BETT and in anticipation of the financial year end. Figure 2 shows the seasonality of eLC spend by plotting it in three separate lines. It suggests that, following the introduction of eLCs, the seasonal peak has moved to the period between June and August. Figure 2 also suggests that by academic year 2004–5 there was hardly any evidence of a financial year-end upturn. This change in seasonality has clearly been driven by eLC rules, which require that schools spend their allocation (announced as part of Standards Fund money) by the end of the following academic year. It is important to recognise that there is likely to be further change in seasonality of expenditure if and when eLCs end. For example, assuming that funding is no longer provided through the Standards Fund, a reasonable expectation is that the annual peak would return to the period preceding the end of the financial year.

Figure 2: Seasonality of reported spend



Level of spend

Detailed analysis of eLC returns suggests that they continue to understate the actual level of expenditure in the market. In particular, we have found that eLC returns appear to underestimate the real level of sales of those who have provided returns by as much as 70%⁵ and that there is a significant number of suppliers, some relatively large, who do not submit eLC returns.

Our analysis of the evidence suggests that, although schools are continuing to spend a significant proportion of their eLC allocations, the level of spend has slowed. Our estimates suggest that:

⁴ Estimate provided by Cambridge Economic Policy Associates (CEPA).

⁵ The CAB study worked with 16 of the larger suppliers to develop a robust dataset of sales of all Curriculum Online registered products in England. The totals from this dataset were compared with the eLC returns to produce the estimate of 70%.

- the level of spend in academic year 2002–3 was in the range £30m–£40m (compared with an eLC allocation of £30m).
- the level of spend in academic year 2003–4 was in the range £90m–£100m (compared with an eLC allocation of £100m).
- assuming that the reported drop off in spend in August 2005 reflects FOI concerns, the level of spend in the academic year 2004–5 was in the range £75m–£85m (compared with an eLC allocation of £100m). Our estimate of the level of spend in academic year 2004–5 using the actual reported spend in August 2005 is £65m–£75m.⁶

The above findings are consistent with the view that the eLC allocation in 2002–3 was fully spent by teachers or schools. However, the apparent reduction in spend in 2004–5 does suggest that there is an increased level of leakage – and that schools and teachers are choosing to spend eLC allocations on other resource priorities.

A similar picture emerged from interviews carried out in early 2005 with a small number of the larger suppliers. These interviews confirmed that sales in the academic year to August 2004 were very good – largely as a result of eLCs. But, since then, suppliers have reported either reductions in sales compared to the same period last year or a slowdown in growth. Suppliers were uncertain of the reason for this. Possible reasons included the existence of a level of content ‘saturation’⁷ or ‘indigestion’⁸ in schools given the high-level of spend in 2003–4 and school budgetary pressures (for instance, from the PPA requirements⁹ of 10% non-contact time).

Given the possible scale of leakage and the impact that this could have, especially when the level of ring-fenced eLCs is to reduce, CAB recommends that the DfES investigate the potential for some form of monitoring of ring-fenced expenditure in schools.

3.1.2 Supply

CAB has also had work done on analysing changes in the number of suppliers and products since February 2004.

The number of suppliers in the market has increased significantly from the level reported in the first CAB report, suggesting that eLCs have stimulated market entry, despite the forthcoming introduction of free BBC content and the future uncertainty about the level of eLCs in the market. Since early 2004, the number of Curriculum Online registered suppliers has increased by around 65% to 811. Most of this increase has been in smaller suppliers of priced products¹⁰ – those that provide up to five products. We are not in a position to make a judgment here about the impact of this trend on competitiveness in the market, product quality and whether the smaller suppliers have raised the levels of product innovation.

Consistent with the increase in the number of suppliers, the number of products has increased by around 32% to 14,668 unique products, of which 67% were priced and 33% were free. Figure 3 shows that the rate of increase of new products (as recorded on the Curriculum Online database) has slowed since 2003.

Within the overall increase in supply, there have been large absolute increases in the numbers of maths, English, science and ICT products registered on the Curriculum Online website. There have also been large absolute increases in products covering non-core subjects. Science, ICT and the non-core subjects have seen the largest proportional increases since early 2004.

⁶ Spend by financial year (April–March) was in the estimated range of £10m–£20m in 2002–3, £60m–£70m in 2003–4, and £80m–£90m in 2004–5.

⁷ ‘Saturation’ refers to schools having purchased what they believe to be a sufficient and appropriate range of digital content to meet their teaching needs for the foreseeable future.

⁸ ‘Indigestion’ refers to schools having purchased digital content in the past which has yet to be used or is under-utilised as it has been difficult to integrate, leading to lack of requirement to buy additional digital content at present.

⁹ Professional time for planning, preparation and assessment.

¹⁰ Accounts for around 80% of all Curriculum Online registered suppliers.

Figure 3: Number of priced and free products by year of publication

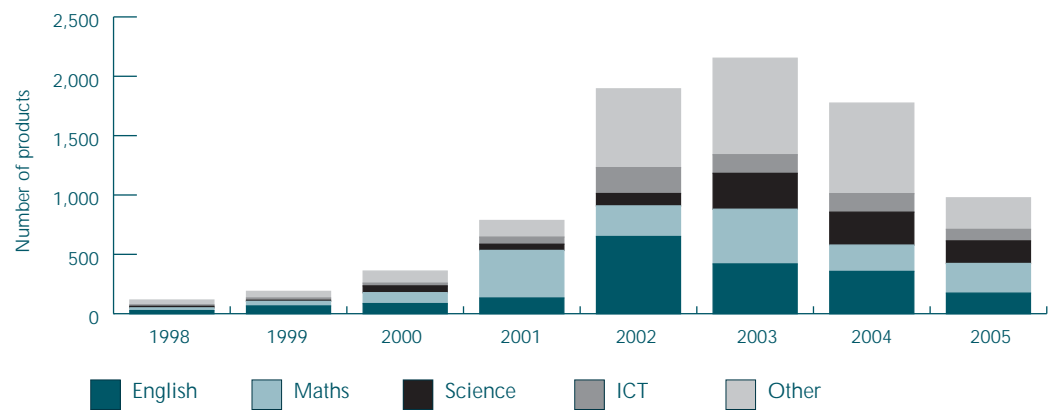
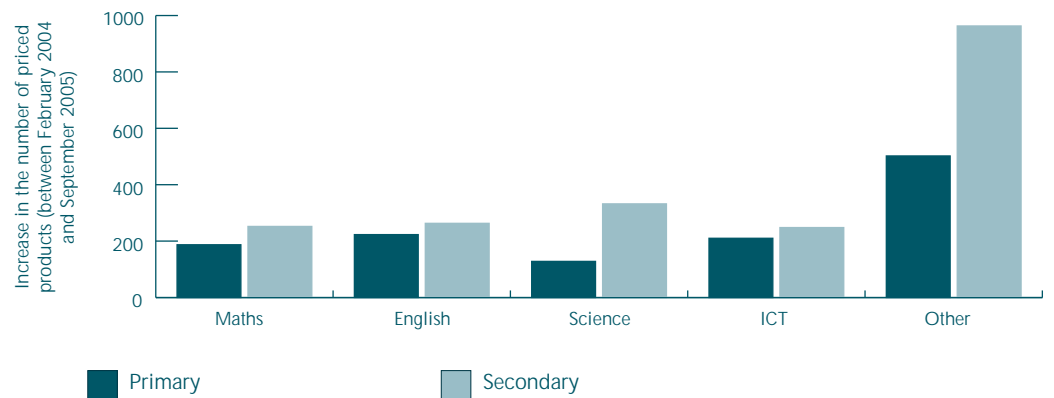


Figure 4 shows that there have been larger absolute increases in numbers of products for secondary levels than for primary – and particularly in science and non-core subjects. This is consistent with our discussions with suppliers, some of whom have indicated that they are starting to invest in products for secondary school markets as well as for primary schools.

Figure 4: Increase in the number of priced products by subject area and school type



3.1.3 Market concentration and allocation of spend

We have also considered market concentration and the allocation of spend in assessing the impact of eLCs on the market – using analysis of eLC returns to understand the distribution of spend across suppliers, products and product types.

In the first CAB report we stated that, based on eLC returns for the first £30m, (i) the 10 companies with highest market share accounted for 61% (£14m) of the £23m reported spend, (ii) these 10 companies accounted for just over 10% of Curriculum Online registered products and (iii) 48% of spend over the period related to the 20 most popular products.

More recent analysis of the distribution of expenditure across suppliers broadly confirms the findings in the first CAB report:

- The proportion of sales accounted for by the top 10 suppliers has been in the range of 50%–60% over the eLC period as a whole.

- These companies again accounted for around 10% of Curriculum Online registered products.¹¹
- The average level of eLC reported sales in the 'tail' of the distribution (of around 500 companies) is less than £15,000 a year.
- The proportion of total expenditure on the top 20 products over the whole eLC period has been around 40%.¹²

Changes in the concentration of the market over the eLC period are difficult to identify from the data. Our judgement is that any reduction in concentration resulting from the increase in the number of suppliers has been marginal at most. Figure 5 shows what proportion of reported sales were accounted for by the largest-selling suppliers. For example, the top five selling suppliers account for around 50% of sales, the top 10 for around 60% of sales and so on.

Figure 5: Percentage of total spend by supplier¹³

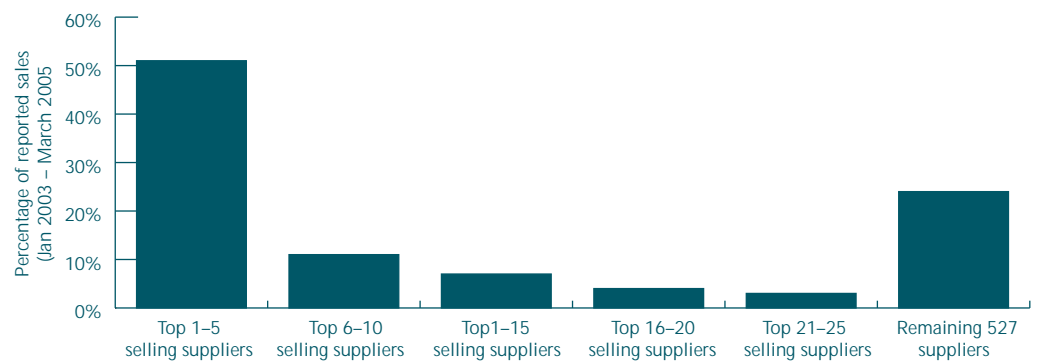
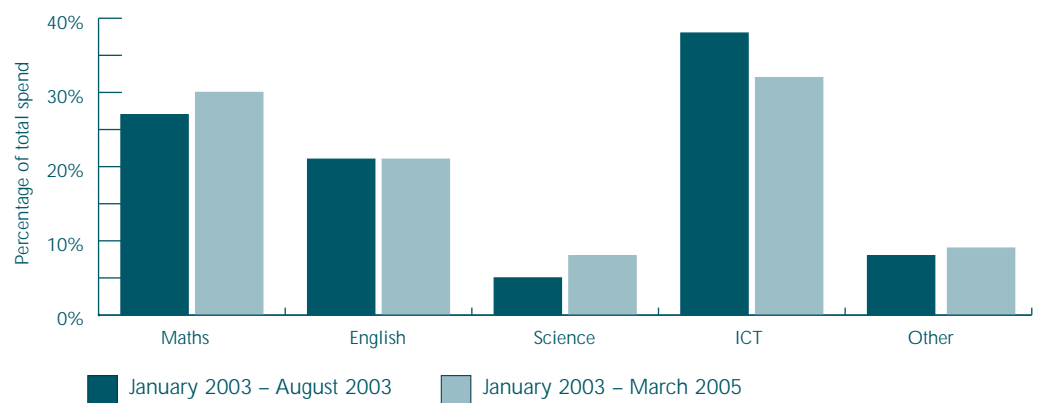


Figure 6 compares the allocation of spend by subject for the first six months of eLCs with data for the whole eLC period to date. It suggests that most spend continues to be on maths, English or ICT products.

Figure 6: Percentage of total spend by subject



¹¹ Taken from CAB's exercise to create a more robust dataset for 16 of the larger suppliers, but excluding retailers of third-party content.

¹² Further work on the changes in the composition of the top 20 products since the introduction of eLCs might provide additional information on the level of content saturation among teaching professionals, by revealing whether the most popular products at present were the most popular in previous years.

¹³ Figure 5 reflects the upper end of our estimate of the percentage of spend going to the top 10 selling suppliers, using data supplied by the DfES. The lower end of our estimate is based on an up-rated estimate of the total size of the market that accounts for the under-reporting of the total size of the market.

3.1.4 Investment intentions

Our observations here are based on a small number of structured interviews carried out for CAB with suppliers or suppliers' representatives during the 2004–5 academic year. Overall, we believe that eLCs have continued to have an impact on the scale of spend and a positive but limited impact on investment. In particular, discussions with suppliers have indicated the following:

- eLCs have given companies confidence to invest in curriculum-based resources – which they might not have done in the absence of eLCs. But investment in the recent academic year (for the small sample considered) was, if anything, slightly lower than in the previous two or three years.
- Suppliers with established brands/platforms are investing to: (i) broaden the curriculum coverage of the content available for the brand and (ii) add functionality and/or depth in areas of the curriculum already covered.
- A number of content suppliers that have to date focused on the primary sector are investing in products for secondary markets.
- Although most suppliers still expect to prioritise the core subjects, there is a suggestion that there is increased investment in non-core subjects. Suppliers also reported an increase in demand for content for use with electronic whiteboards, and also products for use with pupils with special educational needs (SEN).
- Companies expressed particular uncertainty about future investment plans. All of the suppliers interviewed believe that ending ring-fenced funding for content would have a significant negative impact on sales and investment.

It should be noted that CAB intends to explore these issues and trends further.

3.2 Impact of Curriculum Online on industry and education

At its November 2005 meeting, CAB considered an interim report from NatCen and the University of Bristol on the impact of Curriculum Online on both industry and education. This research has considered the impact of the Curriculum Online programme as a whole, covering both eLCs and the Curriculum Online website. All comments are taken from the evaluators' reports and, unless otherwise stated, relate to the Curriculum Online programme as a whole.

3.2.1 Findings from the industry impact studies

The findings presented to CAB comprised both quantitative and qualitative reports compiled by the University of Bristol on its survey conducted in January 2005. Our understanding of the evidence from this interim report is as follows.

- The major route to market remains direct sales. Most companies have not re-aligned their marketing in response to Curriculum Online. Where they have made changes, this is to target those with eLC spending power. Two thirds of interviewees believed that there is more digital content on the market as a result of Curriculum Online, and expressed concern that buyers still regard the Curriculum Online logo on registered products as a symbol of quality assurance.
- Where the Curriculum Online programme is perceived to have had an impact on product development, it has had a small positive effect on content and the number of products, as well as on investment in development.
- Some 80% of companies interviewed produced new products since 2003, and 50% believed that Curriculum Online, in the form of eLCs, had influenced this development.
- There has been a slight shift towards the development of online products, but digital content still appears to be overwhelmingly delivered and used offline. It is anticipated that the large-scale introduction of broadband into schools may influence this development in the future.
- Concerns were expressed about the achievement of granularity within the Curriculum Online service and the complexity of the meta-tagging process.

- Prices of products have been largely unaffected by Curriculum Online, but the pattern and volume of sales have been influenced.
 - There is some concern that schools are 'awash with software', and that the market is becoming more competitive with products being selected on price rather than content.
 - Many companies suggested that users are only now becoming more knowledgeable about the service, and that they need further support.
- Industry expressed uncertainty about the lasting effect of Curriculum Online, and there was general agreement that the function of the Curriculum Online website is in large measure dependent on the continuation of eLCs.

Overall, the reports suggest that the Curriculum Online programme has had a positive impact on the industry, but concerns remain in relation to several key areas influenced by the intervention.

3.2.2 Findings from the education impact studies

The key findings presented to CAB were drawn from a small sample size but provided the Board with an early indication of how the Curriculum Online programme is affecting teaching and learning in schools. The main points are as follows.

- There was no evidence that teachers in schools with a more developed ICT infrastructure were any more knowledgeable or engaged than teachers in less developed schools. Factors influencing teacher knowledge and engagement included their personal level of comfort, sharing of best practice, perception of benefits of ICT, levels of technical support and ease of access.
- eLC spending processes were more varied in primary schools than secondary schools.
- The key information for selection was how well the software worked and how relevant it was to the subject. Recommendations from other teachers or from courses were highly valued although treated with caution owing to differing school environments. Information given by manufacturers was considered limited and treated with scepticism. The most satisfactory situation was where teachers were able to trial the software.
- The purchase criteria offered by practitioners fell into 'general' and 'specific' categories, although compatibility with hardware was a key concern for all purchases. The more general criteria were linked to school or government policy. The specific criteria were associated with what the software should be able to do or provide, such as user-friendliness and subject relevance.
- Technical support was seen as key, and practitioners wanted a specialist provider who understood the school environment and its needs, and who offered a responsive as well as a proactive service.
- Primary schools tend to purchase one key piece of cross-curricular software as well as making wide use of the internet. Secondary schools use well-known commercial applications, internet resources and email, subject-specific software and homemade/adaptable software.
- ICT was seen to have an impact on pupils' engagement, motivation and learning in several aspects of classroom life.

In general, the report noted that the impact of the Curriculum Online programme on teaching and learning has been varied. Evidence presented to CAB shows a mixture of positive findings and concerns relating to different aspects of teaching professionals' use and perceptions of ICT.

3.2.3 Overall conclusion

Overall, we believe that our analysis supports the conclusions presented to the Secretary of State in CAB's first report: that eLCs have had a major impact on sales and a positive but limited impact on investment and innovation.

In particular:

- The evidence indicates that there was a considerable increase in sales between the academic years 2002–3 and 2003–4. This was largely driven by ring-fenced eLCs. But sales in 2004–5 look slightly lower, and less than the eLC allocation of £100m – suggesting increased levels of leakage, possibly caused by saturation of spend on digital content or other budget pressures.
- Our analysis of supply and market concentration suggests that eLCs have attracted a large number of new, smaller, companies into the market. But we have not found evidence of a major reduction in the proportion of sales accounted for by the larger suppliers or the most popular products.
- While eLCs have had a positive overall impact on investment in the period since their introduction, there is evidence that the annual level of investment may be slowing. For many firms (particularly the larger ones), this has been associated with the creation of an environment where there is confidence to invest, despite the BBC's market entry. For smaller companies, increases in investment are closely related to their individual level of sales – which for most have increased as a result of eLCs. However, evidence from the most recent survey of the private sector suggests that the annual level of investment may be slowing.

This analysis does not provide CAB with the evidence to draw conclusions about the quality of investment that has been supported. However, our judgement is that, although eLCs may have had a significant impact on promoting awareness and use of digital content in the classroom, they have probably not led to a step change in the level of innovation embodied in digital content used in the classroom.

This suggests that the availability of funding alone will not create the conditions for the development of more innovative practice and products. As discussed in the second CAB report, this is not to suggest that the private sector does not produce high-quality or innovative products. Rather it is recognition of the need for the private sector to make a return on commercial investment, which constrains the extent to which the private sector can invest ahead of the market (that is, what most teachers are able and willing to use).¹⁴

3.3 Further observations on issues raised in previous CAB papers

Our comments are made in the light of the recent announcement by the Schools Minister that eLC funding will continue in 2006–7 and 2007–8, but with the ring-fenced element at the lower rate of £75m and £50m respectively. We comment in particular on the following.

- **eLC allocations**

In our first report we recommended that the then Secretary of State give consideration to making an early announcement of his intention to extend eLCs. We also noted that there was a reasonable case from an educational perspective to argue that £100m a year was too high.

- **eLC eligibility rules**

In our second report we made recommendations on both the 80:20 rule and the eLC eligibility rules. For both, we made recommendations with different assumptions about the level and nature of eLCs in 2006–7 and 2007–8.

- **Aggregation and procurement**

Our second report also indicated that CAB supported the view that there was, at that time, potential to achieve real value-for-money improvements through aggregation of eLC purchasing, and suggested that further consideration might be given to this issue.

- **Commissioning**

In the second CAB report we provided the Secretary of State with some initial views on the case for additional commissioning and proposed an 'innovation challenge fund'.

¹⁴ It should also be noted that the need to make a return has strong positive impacts too – in terms of the requirement for market focus and management of costs in research and development of new products.

- **The Curriculum Online website**

In the second CAB report we commented on the performance of the Curriculum Online website and expressed concerns about its focus and level, and types of usage. Our recommendation was that Becta's strategic review of the website should result in a clearer understanding of the website's purpose and the value that it adds for users.

Each of these areas is outlined in more detail below.

3.3.1 eLC allocation and eligibility rules

Allocation levels

We welcome the announcement by the Schools Minister of continued eLC funding, including the ring-fencing for 2006–7 and 2007–8. We note that this is unlikely to have a material impact on the attrition between the private sector and the BBC over the digital curriculum service – which will probably be the single most important factor for investment decisions by many companies.

Notwithstanding this, our view is that the announcement is important in providing the industry with a greater degree of confidence to plan for the future. Given the importance of clarity and transparency in the market, we believe that there would also be merit in the Secretary of State's clarifying her policy in relation to eLCs beyond 2007–8, although we recognise the potential problems that this might cause if considered in isolation from decisions taken on the BBC digital curriculum service.

We agree that the amount of ring-fenced eLCs announced for each year is appropriate, given the concerns expressed about levels of 'indigestion' of product by teachers and schools. It will give schools and teachers greater flexibility over the choices they can make, although we recognise that this means that some, or possibly all, of the non-ringfenced element could be spent on other ICT or non-ICT priorities.

CAB notes that it would welcome the DfES endeavouring to improve the scale of eLC spend on innovative and quality products. CAB recognises that it makes sense to reduce over time the proportion of the £100m that is ring-fenced, assuming that the DfES expects to stop providing ring-fenced funding at some point. This is because the size of likely 'cliff edge' effects on sales (once eLCs are stopped) will be lessened if the reduction has been gradual. But note that this is in the context of our observations on procurement support in section 3.3.3.

eLC eligibility rules

Our recommendations in the second CAB report in relation to eLC eligibility rules after 2006 were conditional on whether or not a decision was taken to continue eLCs at a significant level or if eLCs were to be significantly reduced¹⁵. The Schools Minister's response to the recommendations in our second report on the 80:20 and eLC eligibility rules clarified that no substantial changes would be made given the reduction in ring-fenced eLCs. In the light of the Minister's response to our previous recommendations, we consider that registration, sales returns and compliance processes should be further enhanced. We also take the view that guidance on the interpretation of the rules will need to be developed to provide greater clarity.

3.3.2 Aggregation

We have given further consideration to the potential for aggregation of purchasing within the current eLC framework. Our judgement is that the opportunities for aggregation driven at a central level are now limited. This reflects (i) the fact that a significant period of time has passed since this was proposed, (ii) that the extension of eLCs came without obligations regarding aggregation, (iii) the decision taken by Becta (which we support) not to pursue at this time the development of procurement functionality as part of the Curriculum Online website, and (iv) the difficulties associated with achieving aggregation while leaving choice with school managers. We note, however, that there may still be options for DfES/Becta to aggregate purchasing at a central level if they wish to promote particular products as part of, for example, the BETT Awards and other curriculum initiatives. We would support DfES/Becta in pursuing these opportunities for aggregating quality products.

¹⁵ The level of eLCs referred to as a significant reduction in those recommendations was £50m or below.

In the medium term, the increased adoption of learning platforms will present a changing landscape of opportunities for providers of content. Teachers will have tools which enable them to manage and exploit resources in a different and more granular way. This will have an impact on the opportunities for aggregation and procurement. For example, learning platform providers may act as an intermediary channel to procurement and aggregation, while teachers may wish to take the opportunity to procure and blend the 'best of breed' from many different suppliers rather than purchasing a whole suite of content from one supplier. With the combination of learning platforms and pervasive access, there may also be a change in the purchasing models. It should be noted that CAB plans to do further work in this area.

3.3.3 Procurement support

There is a need for continued improvement in schools' approaches to procuring digital learning resources – both to make purchasing decisions in a more strategic manner and to improve value for money. This is particularly the case if eLCs end, and the driver to spend on digital content is removed.

Becta's self-review framework aims to support the effective deployment and management of ICT resources. The resources element of the framework will support institutions in three key areas: (i) effective provision of appropriate learning environments and resources; (ii) deployment, availability and access to ICT resources; (iii) management (including procurement of resources) and evaluation of use of ICT resources.

CAB believes that the use of the Becta self-review framework and related measures (which could be developed with stakeholders, including industry) has the potential to improve school purchasing decisions regarding curriculum-relevant ICT resources. More strategic purchasing will also have the impact of smoothing the transition from ring-fenced funding for digital learning resources (eLCs) to non-ringfenced funding whenever that occurs.

Possible measures might include:

- publications providing guidance and 'best practice' case studies on the development and implementation of school ICT strategies
- advice and guidance on approaches to aggregation at the local level (such as LEA level)
- seminars for ICT co-ordinators.

3.3.4 Commissioning

CAB remains of the view that eLCs have had a positive but limited impact on the market. However, the form of the intervention is not weighted towards (or against) the development of product and practice that is ground-breaking – in the sense that it is ahead of the market and current teacher practice.

In its second report CAB recommended that the Government take forward the proposal of an 'innovation challenge fund' – to be introduced in parallel with the reduction of eLCs and by 2007–8 at the latest. At the present time, the Government does not wish to pursue this proposal. CAB recognises that consideration still needs to be given to the question of how to support innovation in product and practice. We observe that ongoing curricular and pedagogic developments are likely to present significant opportunities to foster an environment in which innovative (and effective) approaches are encouraged and expected. In the light of this and of the decision not to pursue an 'innovation challenge fund' at the present time, in Section 5 we give further consideration to measures to support innovation in the context of new opportunities.

3.3.5 Curriculum Online long-term strategy

Following the transfer of Curriculum Online to Becta in January 2005, Becta carried out a strategic review. CAB has received regular reports on the progress of the consultation and at its meeting in November discussed Becta's proposed strategic approach and priority activities.

Proposed strategic approach

The strategic review of Curriculum Online and wider resource-discovery services has led to the conclusion that it is necessary to take a fundamentally different approach to ensure coherence across the sector and to improve selection and use of digital learning resources.

Becta has recommended five strands of strategic activity:

- Co-ordination of resource-discovery services across Government; building strong links with commercial services to improve capability and quality of service and reduce duplication.
- The development and implementation of an agreed set of standards and specifications to support user resource-discovery needs.
- Improvement of the co-ordination, dissemination and adoption of best practice in delivering search services which are more aligned to individual users' needs.
- Developing mechanisms to improve quality information and assurance to support investment and purchasing decisions by suppliers and teachers/schools respectively.
- The rationalisation and development of the Becta-managed resource-discovery services (Curriculum Online, NGfL, VTC and other services) and the integration of these services with other channels for the teaching workforce.

Achieving these objectives will require content providers, Government and its agencies, intermediaries and support agencies to work in partnership to bring about greater coherence for the sector. Importantly, these five strands will support the aim of Priority 3 of the e-strategy: to enable practitioners to plan, find, access, share and exploit digital resources to transform learning and teaching.

In the context of this strategic approach, key conclusions Becta has reached at this time on the future development of the Curriculum Online website are as follows.

- The key purposes of the service are to support the management of processes for eLCs and to support teachers in their planning and resource discovery.
- Quality assurance is a vitally important role for the service and must help practitioners to recognise good-quality resources.
- Although Becta considers including procurement functionality to be valuable, it is unlikely to be possible to establish such systems cost effectively.

CAB supports these conclusions. It has also noted Becta's decision to continue the consultation process and to publish a paper in January 2006 providing more detail on specific actions.

3.4 Summary and recommendations

In establishing our recommendations, CAB has been particularly aware of the changing medium-term policy environment – as signalled by the Schools Minister's announcement. Indeed, we believe that we are rapidly approaching a crossroads in terms of policy in this area. Our observations are heavily dependent on what DfES and DCMS decide on the future of both the BBC digital curriculum service and eLCs. These are clearly interdependent – not least because of the link made between the two as part of the European Commission State Aid decision.

In the light of this analysis, and the recent announcement of additional ring-fenced eLCs (at a declining rate), we have reviewed our observations from earlier papers on both eLC eligibility rules and also issues relating to procurement and commissioning.

In acknowledging the decision of the Schools Minister not to take forward at the present time the 'innovation challenge fund' proposed in our second report, we would reiterate the need for further consideration and work on how best to support innovation in product and practice. The reduced level of ring-fenced eLCs highlights the need for the eLCs intervention to improve levels of innovation. We believe that Government should consider ways of working with teaching professionals, academics and the private sector to ensure that its investments deliver real innovation in product and practice. In Section 5 we consider the issue of innovation in more detail and set out a recommendation.

The analysis of the policy options available to Government is a matter for the DfES and DCMS. However, CAB notes that probably the first and most important decision is whether the BBC will be allowed to continue its investment in the digital curriculum service beyond 2008 – and, if so, whether there should be any modifications to the service or DCMS conditions to reduce or remove the potential for ‘unfair’ competition and indeed provide greater educational added value from the digital curriculum. Our initial observations on the BBC’s digital curriculum service are set out in Section 4.

Recommendation 1 – eLCs and procurement

The Schools Minister’s response to the recommendations in our second report on the 80:20 and eLC eligibility rules clarified that, given the reduction in ring-fenced eLCs, no substantial changes would be made. In the light of the Minister’s response to our previous recommendations, we consider that registration, sales returns and compliance processes should be further enhanced. We also take the view that guidance on the interpretation of the rules will need to be developed to provide greater clarity.

The Schools Minister has also noted the relationship between eLCs and the BBC digital curriculum service. This relationship will change with the reduction in ring-fenced eLCs and the anticipated phasing out of this funding initiative. In addition, there is uncertainty regarding plans for the BBC digital curriculum service beyond 2008. CAB believes that work needs to be undertaken to explore how Government can best maximise the value of its existing investment through support for improved procurement methods and use. These changes suggest the need for a transition to a new policy environment. More strategic purchasing will have the impact of smoothing the transition from ring-fenced funding for digital learning resources (eLCs) to non-ringfenced funding whenever that occurs. This may help to further reduce the risk of ‘cliff edge’ effects on sales in a post-eLC environment.

Therefore CAB sets out the following recommendations:

- That the DfES reach an early agreement with Becta to
 - further enhance the Curriculum Online registration and compliance procedures.
 - and (drawing attention to our earlier suggestion) where there is reasonable evidence of misuse, support Becta in requesting a written statement from one of the officers of the company affirming that their sales comply with the rules.
- That Becta develop appropriate guidance on the interpretation of the rules.
- That Becta review how information on eLC returns is collected, maintained and reported in a manner that ensures the confidentiality of commercially sensitive information.
- Addressing the issue of leakage, the DfES (a) consider how it can promote more effective and discerning spending of eLCs **and** (b) investigate how expenditure can be checked without imposing undue burdens on schools.
- That the DfES (a) provide early clarification regarding the extension or discontinuation of eLCs post 2008 **and** (b) seek early clarification of the BBC’s intentions regarding the future of the digital curriculum service beyond 2008.
- That Becta build on existing activity in order to encourage best practice in procurement and use to ease the transition to a post-eLC environment. In particular, Becta should take forward its self-review framework for this purpose. The Becta self-review framework provides school leaders with the opportunity to self-review their educational ICT resource procurement strategy and usage and we recommend this as a key means of enhancing procurement decisions.

In this section we set out CAB's views on the issues and put forward recommendations surrounding the current position of the BBC digital curriculum service.

4.1 Context

4.1.1 CAB's remit

CAB's remit from the DfES includes consulting on relevant public and private sector commissioning plans and expenditure (Objective 3). Further, the DCMS approval condition 11 affirmed that 'the BBC will work closely with the Curriculum Online Content Advisory Board and, where possible, follow its recommendations'.

4.1.2 Summary of CAB's 2005 work programme relating to the digital curriculum

Our engagement with the BBC has continued on a regular basis in 2005. The BBC has presented progress reports to the quarterly meetings of CAB, and in June 2005 we viewed some early prototypes of digital curriculum resources. We have also engaged regularly with the commercial sector regarding the development of the service. Going forward, a working group has been established to engage with the BBC on issues relating particularly to the complementarity and distinctiveness of the digital curriculum service. The working group will report to the regular CAB meetings.

CAB has continued to review Becta's progress on ICT amenability and the digital curriculum service. In addition, work carried out on the impact of eLCs has informed dialogue relating to the BBC digital curriculum service. We note that Becta's partnership with the UK curriculum authorities has been invaluable to the successful development of the amenability process. We also note that significant curriculum development work is taking place in each of the four nations. As far as possible, the amenability process and the BBC's plans have taken account of these developments.

4.1.3 Progress to date

The development of the service appears to be following the time scale set out in the DCMS conditions, and the BBC has indicated that it expects to meet its launch date of January 2006. The BBC has accomplished a great deal of work preparatory to the launch this year. The first phase of the amenability review process was completed in January 2005 and the BBC posted in that month the learning outcomes for subjects to be resourced by the BBC in 2006. CAB has reviewed and approved the amenability process going forward as it covers the subjects to be developed in 2007 and 2008. The amenability review process for subjects to be resourced by the BBC in 2007 was completed in November, and it is anticipated that the entire process will be completed by the middle of 2006.

In June 2005 the BBC published its annual commissioning plan for 2007. The BBC also completed its first round of commissions contracted to direct third-party suppliers. We understand that user testing of the service has also taken place in schools. We also note that in October 2005 the BBC gave a demonstration of early elements of the service to the commercial sector.

4.1.4 The total public investment and educational policy

The scale of the total public investment represented by the Curriculum Online programme and the BBC digital curriculum service underlines the fact that the development of the BBC service should take as much account as possible of the Curriculum Online programme and its impact on the market and on schools. The DCMS conditions and the subsequent European Commission State Aid decision further underline this relationship.

The market and educational context has of course developed since the approval of the service in 2003, particularly in terms of the number of curriculum-based products available for purchase, which has continued to increase over the last three years. The BBC service will add to the quantity and diversity of resources that users will be able to choose from.

In addition, the expectation that the BBC will be a leader in innovation and quality is highly relevant to the goals of the DfES e-strategy, 'Harnessing technology', and the development of the use of ICT in schools and beyond.

The potential cumulative impact of the total public investment also raises some general concerns about saturation and the effect on schools of the different demands to select, procure and implement new resources in teaching programmes. We note that the major follow-up evaluation by NatCen of the Curriculum Online programme in schools, which is due for completion next year, will provide further evidence on how schools are managing selection, procurement and implementation issues.

4.2 Discussion of key issues and recommendations

In this section, we set out a number of observations on the extent to which the BBC is meeting the DCMS requirements set out in the DCMS approval in January 2003. In doing so, we make the following points.

- CAB fully supports the successful delivery of the BBC digital curriculum.
- We recognise the challenge faced by the BBC in managing and delivering such a major investment in this area within the constraints of the conditions placed on the service.
- We note the significant production challenges facing the BBC due to the shortening of the production period as a result of the time required to complete the approval process.
- We recognise that our observations are based on only a partial understanding of the detail of the proposed product, and also that the BBC may have already gone some way towards taking account of earlier CAB comments.
- We note that any assessment of the extent to which BBC has met these requirements should take account of the development of the market since the approval of the service in January 2003. This includes the considerable investment through eLCs and the fact that there is now an improved understanding of the needs of teachers and learners and what makes content compelling.
- We note the increased concern and uncertainty in the commercial sector about the impact of the digital curriculum service – particularly given the perceived lack of complementarity and distinctiveness of the service.

The extension of the eLC scheme to 2008 may help to alleviate some concerns – for example those relating to future investment plans – but clearly the extension will not dispel all the anxiety. The uncertainty surrounding the potential BBC market impact continues to undermine confidence in medium- and long-term investment. This might even continue irrespective of the impact of the BBC digital curriculum service because the dynamics of the present market are heavily influenced by the relatively short-term eLC funding initiative. In addition, the market impact of the digital curriculum will not be instantaneous across all subjects, as it will emerge at a time of considerable market growth that has, at least in part, been fuelled by the provision of eLCs. However, there may be some immediate impact where it maps specifically to present commercial or non-commercial provision in the early stages of the roll-out.

4.2.1 Complementarity and distinctiveness (DCMS condition 4)

Definitions and approach

'The service must innovate continually, and exploit the extensive archives of the BBC and its media-rich resources, and promote technological and pedagogical experimentation. The service, taken as a whole, should be distinctive from and complementary to services provided by the commercial sector.'

Condition 4 of the DCMS conditions

We note that this DCMS condition does not define complementarity and distinctiveness, nor does it specify criteria for how these attributes will be assessed in the service 'as a whole'. Our interpretation of the conditions is therefore as follows.

DCMS condition 4 relates in general to a responsibility on the BBC to minimise 'competition' between itself and the market. Given this, we regard the requirement for complementarity as the overriding element of the condition. At its simplest, we believe that this involves asking the following three questions.

- Are the curriculum areas covered by a digital curriculum resource already covered by a product provided by the private sector?

If the answer is 'no', there is a likelihood that the product will complement the commercial market.

- If there is overlap in the curriculum areas covered, are the proposed resources distinctive from existing products?

We discuss the potential aspects of distinctiveness in more detail below. However, these are likely to include aspects such as differences in resource type, pedagogic approach or use of media-rich assets.

- Is the digital curriculum resource technically complementary to existing resources?

In this context, 'complementary' primarily relates to interoperability and accessibility.

We recognise that answering these questions poses some real practical difficulties. For example, the BBC does not have detailed access to private sector investment plans/product pipeline and, in the absence of these, it can focus only on current provision. These three questions relate to individual resources, and do not consider the service 'as a whole'. It is difficult, prior to the substantial availability of the BBC service, to determine how the BBC service 'as a whole' might compare with current commercial services. In terms of the present market, the proposed scope of the BBC digital curriculum suggests that it might resemble some of the larger online subscription services and products provided by a number of the major players in the market.¹⁶

Initial assessment of BBC provision

The BBC approach to complementarity has been to focus on products that the learner can use at home – independent of teacher support. In particular it has emphasised:

- availability of the service at home
- commitment to anytime/anywhere learning
- the learner-centred focus (including support for independent learning).

The BBC has argued that this contrasts with the commercial market's focus on producing products and services for use in schools by teachers.

While we agree that these aspects identified by the BBC are relevant, we do not believe that the availability of the service at home is compelling evidence of complementarity, since the service will also be available in schools. Neither is the (independent) learner focus argument compelling, since some commercial suppliers also provide services which have the learner as the primary focus. In our view, it is unlikely that these elements alone would fulfil the spirit of DCMS condition 4.

¹⁶ See, for example, the analysis of the market in the most recent EPS report, E-learning in the UK Education Marketplace (April 2005).

Using the framework of questions set out above, our analysis is as follows. First, in terms of curriculum coverage, the substantial scope of the digital curriculum service means that a significant proportion will overlap with provision by the private sector. The exceptions are minority subjects like work-related education, minority language provision such as Gaelic and some SEN areas. Second, given this substantial overlap, we believe that it is important for the BBC to establish more clearly the distinctiveness of its product. The sources of evidence for distinctiveness are likely, in our view, to include the following (although these are not exhaustive):

- Evidence of the extensive exploitation of the BBC's media-rich and diverse archive.
- Evidence of the degree of pedagogic and technical innovation and experiment across the service.
- Evidence of original, value-added approaches at the subject level.

The significance of the archive in DCMS condition 4 reflects the fundamental place it is intended to have in the service above and beyond its role as an element of distinctiveness (and therefore complementarity). Of course, the use of archive material should be appropriate and serve pedagogic needs – it is not just a matter of quantity of material. Nonetheless, the market and the educational community have rightly placed a significant emphasis on the archive precisely because it is the one aspect of the service which is perceived as distinctive from existing products. However, it would be important not to over-emphasise any use of the archive to the exclusion of other approaches to distinctiveness.

We anticipate that further elements of distinctiveness (and therefore complementarity) will emerge as the service progresses. For example, in its plans for primary and secondary English, the BBC proposes to explore means to allow learners to publish their work and share it with a wider audience. Clearly, given the popularity of its websites, the BBC is in an advantageous position to facilitate national showcasing and sharing of creative work from various curricular areas.

However, the evidence available to CAB to date does not allow us to draw conclusions on the complementarity and distinctiveness of the 'service taken as a whole'. In our assessment, key indicators of progress such as evidence of the rich exploitation of the archive (which so far appears somewhat meagre) and the evidence of distinctiveness in terms of innovation from our observations of the service to date, do not signal major progress towards the fulfilment of DCMS condition 4. Overall, we are not yet confident that the BBC service will significantly complement services that the commercial market already provides, and we are concerned that it might in fact broadly replicate them.

We also conclude that the development of a framework to assess complementarity and distinctiveness (as part of the DCMS review) would bring clarity and facilitate consensus regarding the condition. In addition, we note that there is a risk in waiting for the entire service to be available before making an assessment of it 'as a whole', since it would then be too late for the BBC to make material changes to its approach, should that be required. However, CAB notes that it would be unreasonable to judge the whole service on the basis of its early exemplifications and this suggests that an assessment of complementarity and distinctiveness should be considered throughout the roll-out period.

Technical complementarity

This 'technical' dimension of complementarity is primarily the interoperability of the resources of the BBC service with learning platforms such as VLEs through which many schools manage their portfolio of digital resources. We consider this to be an element of complementarity because interoperability has commercial and educational implications. The approval conditions do not stipulate that the BBC follow a particular specification regarding interoperability of its resources with other systems. Our comments and views on this are based on our assessment of the likely issues for users of the service in schools.

Our view is that there are likely to be some interoperability issues with existing learning platforms. We understand that the individual resource elements of the BBC service will use a version of the latest interoperability specifications. Resources using the most recent specifications are not usually backwards-compatible with systems based on earlier

specifications. We note this as an issue rather than as a criticism, since the use of the most recent interoperability specifications should help to promote their adoption. However, we also note that there could be interoperability issues even with systems based on the most recent specifications – depending on how the BBC carries out the implementation in its resources.

CAB has also noted that as the current conditions mean that user data will not be retained by the BBC VLE, the educational value of the service could be affected, particularly with regard to its support of formative assessment. We suggest two options for further consideration as part of the DCMS review: (i) permitting the BBC to develop a more functional VLE which can retain user data and (ii) ensuring that BBC resources are sufficiently interoperable so as to provide other VLEs with data required to support formative assessment in conjunction with those VLEs.

Another component of technical interoperability will be the relationships between the BBC materials and the resource-discovery services provided for teachers. This will require consistent use of agreed metadata and effective relationships with the key resource-discovery services.

In our judgement, supporting implementation of the digital curriculum service in schools will require the BBC to:

- inform providers of learning platforms such as VLEs for schools (and intermediaries that support schools in their procurement and provision) of the requirements for interoperability.
- work in collaboration with providers of learning platforms to ensure that their materials can be successfully imported into their systems and run; and where problems are identified, work with Becta to support the resolution of issues.
- make schools and their intermediaries aware of any interoperability issues with existing learning platforms on the market.
- engage with the key providers of resource-discovery services for schools to ensure that materials can be found appropriately.

We also take the view that information on the functionality of the BBC VLE, accessibility and IPR issues concerning the use of assets which can be disaggregated should be well publicised to support users of the service.

4.2.2 Innovation and experimentation

The DCMS approval conditions make clear that the service must 'innovate and promote educational and technological experimentation – the service must innovate continually'. As with complementarity and distinctiveness, the conditions do not explicitly define what is considered to be innovative. In setting out the following commentary and views, CAB has drawn in particular on its viewing of early prototypes and its ensuing discussion with the BBC.

CAB noted that the prototypes viewed were clearly some way from being the finished article. As mentioned above, following its recent meetings with the BBC, CAB has set up a group to advise and give feedback on the development of the service as it proceeds towards launch in January 2006. We recognise that demonstrations to a range of stakeholders (as well as user testing) are a particularly important means for the BBC to disseminate knowledge of the emerging service and, above all, gain constructive feedback.

Furthermore, while the original intention of some of the conditions imposed on the BBC was not to constrain the BBC from innovation and experimentation, we note that, in practice, some conditions have had that unintended effect. For instance, resource designs which promote the growth of learner independence would be enhanced considerably by elements which provide rapid formative feedback to the user.

Our collective feedback to the BBC highlighted aspects of innovation that Board members considered to be important, including:

- scenarios and contexts for learning materials which are fresh and engaging

- the use of stimulating archive material
- resource designs, such as formative feedback, which support learner independence
- provision of computer-generated feedback to the learner where appropriate
- support for differentiation and challenge
- opportunities for collaborative learning
- opportunities for peer review and peer assessment.

Based on our observation of four selected prototypes, we take the view that there is not yet clear evidence that the service is likely to achieve the DCMS condition. In our opinion, the prototypes viewed did not demonstrate genuine pedagogical and/or technical innovation, nor did they reveal evidence of differentiation and challenge. Nor did the prototypes, in the view of members, demonstrate support for learner independence. At that time the materials could not, in our judgement, be regarded as either innovative or exploitative of the archive.

However, we are encouraged by some of the more recent dialogue we have had with the BBC regarding its thinking on specific technological innovations, and the development of resources to support collaborative learning. At this stage, these are ideas that the BBC is exploring rather than confirmed elements of the service.

The judgement we can make with confidence at this point is that, based on the demonstrations so far, some significant progress needs to be made. The first published group of resources (expected in January 2006) will provide important evidence on the quality of the development process.

4.2.3 The scope of coverage and timescale

The DCMS conditions require that the BBC adhere to annual commissioning plans, setting out the subjects that it intends to cover over the following five years.

The scope of subject coverage as described in the BBC outline five-year plan raises some general concerns. There are few exclusions from the UK curricula at 5–14 in the BBC plan (although the 50-percent limit to amenable coverage in each subject should be clearly noted here). While the approval conditions define a fixed period for the roll-out of the service, it should be noted that the choice of the actual subjects to be resourced belongs entirely to the BBC. The BBC's coverage plan for 2007, for example, covers resources for approximately 17 subjects/age ranges and their national equivalents. The issue is not whether the BBC will be able to meet its own plan and the formal timescale, but whether the pressures created by a plan of this scope may compromise the complementarity, innovation and distinctiveness of the service as a whole and of its individual elements.

Even taking into account the resources and expertise of the BBC and its third-party suppliers, the outline plan is very challenging because of its breadth. This must be a factor in whether the service can meet the standards expected. It is also a concern that the approval conditions might limit unduly the ability of the BBC to revise, refine and improve the service using standard mechanisms such as the ability to change the scope of coverage, to extend or revise the roll-out timescale.

It is our overall judgement that the development of a genuinely distinctive, complementary and innovative service has to be regarded as more important than meeting a fixed roll-out timescale and coverage plan. In educational terms, when materials should be published and in what quantity is less important than their overall educational value. If very few digital learning materials were available to the target audience, it might be easy to argue for the provision of a significant quantity of usable resources over a relatively short period. However, the Curriculum Online programme demonstrates that learners and teachers have access to more materials than ever before. This not only strengthens the argument that the BBC should, above all, avoid creating materials which are simply an alternative to those acquired via eLCs, but also indicates a strong case for the development and agreed communication of shared messages on complementarity. There would be little to be gained by the BBC's meeting its coverage

plan within the timescale to the detriment of those conditions which both protect the interests of the commercial sector and also underpin the educational justification of the BBC digital curriculum as a public service.

4.3 Summary and recommendations

In summary, our judgement is that, from what we have observed so far, CAB does not have an assurance that the digital curriculum service is likely to meet the DCMS conditions that require it to be 'distinctive from and complementary to services provided by the commercial sector' while being innovative. In our feedback to the BBC, we noted in particular our concern that the digital curriculum service does not presently appear to complement the services provided by the commercial sector, and a degree of disappointment with the extent to which the prototypes demonstrated genuine technological or pedagogical experimentation.

CAB has noted that a particular difficulty in the dialogue between the BBC and the private sector is the result of a lack of any clear definition for complementarity and distinctiveness. CAB has also acknowledged the significant production challenges facing the BBC due to the shortening of the production period as a result of the time required to complete the approval process. We further note that these additional factors increase the difficulty for the BBC in terms of its ability to achieve complementarity, distinctiveness and innovation.

In developing our recommendations, CAB has been particularly aware of the changing medium-term policy environment. Indeed, we consider that we are rapidly approaching a crossroads in terms of policy in this area. CAB believes that the underlying issues related to the BBC digital curriculum service will result in further attrition between the BBC and industry and could lead to further action under European Commission processes. We therefore consider it essential that the issues surrounding the BBC digital curriculum service be resolved as a matter of urgency.

Recommendation 2 – Review of the BBC digital curriculum service

Given our concern about the progress of the BBC's digital curriculum service in meeting the DCMS conditions, CAB recommends that:

- an early review of the service be taken forward, and, furthermore, that the review determined by DCMS (as set out in condition 18 of the DCMS approval conditions¹⁷) should be carried out at the earliest possible opportunity after launch.
- the review be expeditious and completed by September 2006, as we understand that prior to this date the BBC will not be significantly marketing the service.
- the terms of reference should allow for a fundamental review – including the possibility of significant changes to the scope, coverage and timing of the service; the review should also take note of the changes in ICT education policy and practice since the original proposals were developed.

Recommendation 3 – Complementarity, marketing and information exchange

CAB considers that the inability to resolve the issue of complementarity of the BBC digital curriculum service and private sector provision would be detrimental to the interests of the educational community. We are also concerned about the relative lack of information available to the commercial sector, and express a similar concern about the lack of relevant commercial information available to the BBC to support judgements about complementarity in its planning. Therefore CAB recommends that:

¹⁷ The Secretary of State will review the service within two years of the launch of the service, for the purpose of satisfying herself that the BBC is acting in accordance with the facts and assurances on the basis of which the approval was given and these conditions have been complied with. The review will include an independent assessment, encompassing an assessment of the service's impact on the market, and a public consultation. DFES and OFCOM will have a role in the review as appropriate. Its conclusions will contribute to the wider Charter review process.

- a joint marketing strategy should be developed between the BBC, DfES and the commercial sector, with shared messages on complementarity and resource discovery. These messages could be provided with digital curriculum resources and, for example, be included in supporting materials to give a clear and consistent message about their complementarity to other types of curriculum resources that schools might also use.
- the BBC digital curriculum service should be encouraged to support wider messages on the embedding of effective ICT practices in education.
- BBC digital curriculum resources should be discoverable via the Curriculum Online portal as well as from the BBC website.
- the BBC set up a formal process to demonstrate to the commercial sector new prototypes and resources in advance of their launch, and provide additional information on its plans.
- the Secretary of State endorse the creation of a formal and confidential information sharing process for the BBC and commercial sector to support the resolution of complementarity issues. This should be led by the DTI and developed in close collaboration with Becta. CAB is supportive of the early discussions which have already taken place on the development of such a process.

Recommendation 4 – Interoperability

As part of its discussions with the BBC, CAB members have noted the BBC's initial dialogue on interoperability with the commercial sector and Becta, but we still have concerns about the interoperability of the BBC's resources with existing learning platforms and systems. CAB has also noted that as the current conditions mean that user data will not be retained by the BBC's virtual learning environment (VLE), the educational value of the service could be affected. Therefore CAB recommends that:

- The BBC address this issue by publishing as a matter of urgency relevant details on interoperability, resource discovery, IPR issues, accessibility and other related matters. This work should be carried forward within the ambit of the framework of open standards and specifications that Becta is developing and any areas of dispute referred to Becta for an independent view.
- The issue regarding retention of user data by the BBC VLE should be included in the remit of the BBC digital curriculum service review (see recommendation 2).

In this section we summarise key areas of work carried out since January 2005. These are important to the effective delivery of the Curriculum Online programme as well as to the development of innovation in a changing market. Section 5.1 reports on work to determine best approaches to gap and opportunity analysis. We also comment here on the links between innovation and opportunity in the context of curriculum and pedagogic development. Section 5.2 reports on further work undertaken on e-learning quality. Sections 5.3 and 5.4 summarise issues in the area of both technical and accessibility standards.

5.1 Approaches to gap and opportunity analysis and innovation

As part of our work we have again considered issues relating to gap analysis. At our March 2005 meeting we discussed a prototype methodology for identifying gaps in digital resources. This initial work was carried out in support of CAB's remit to consider the depth, breadth and range of curriculum coverage. In September we considered a further paper which focused more on the strategic uses of gap and opportunity analysis, and how it might be used effectively in the context set out in the e-strategy.

The work carried out demonstrated clear strategic advantages to concentrating mainly on a high-level approach which could include future curriculum development and emerging technologies. This level of analysis was seen as more relevant to policy development and initiatives which could influence the market. A more detailed focus could examine the fine details of the existing curriculum, but would be affected by the sheer volume of the resources available.

CAB noted the impact that curriculum development has on the market by preventing it from becoming stagnant, but also recognised that it is a source of concern for content developers because of the uncertainty generated. Current curriculum requirements are a significant influence when schools are managing and planning resources, and can lead educational institutions to prefer certain types and scales of resource. This result is obviously not an intention of government initiatives, but happens as a practical and economic response. Other points to note from our discussion are as follows.

- While the eLC scheme has had an impact on the size of the market, it has had less influence – if any – on the kinds of products and services available. A general funding initiative like eLCs is unlikely by itself to result in the filling of gaps, if the gaps are where investment is not regarded as commercially viable.
- Some public sector initiatives actually create gaps and opportunities, such as introducing interactive whiteboards or pedagogical and training initiatives. The question is whether these initiatives, combined with school procurement methods and the sales/marketing expertise of companies, are leading to preferred options in the type of content and services that schools acquire. This may have an impact on the range of ICT available for learning and teaching. Although there is a wide range of companies and products available, the dominance of a small number in eLC purchasing indicates that schools appear to want a narrower focus.

We believe that the development of a modernised curriculum and new pedagogic developments will provide real opportunities in the future to evolve and embed more innovative practice and products. In the light of the Schools Minister's decision not to pursue at present the proposed 'innovation challenge fund', we consider that a strategic approach to innovation should be developed. We take the view that innovation is most likely to be fostered (both in practice and product) in a curricular and pedagogic environment which encourages and expects innovative practice and product to be a significant element. The focus should not be on innovation for its own sake, but where it will have an impact on key educational targets and outcomes such as achievement, improvement in pedagogic practice, learner motivation and so on. We note that the e-strategy has as an action to 'target specific funding for innovation, especially where it has most impact on inclusion and participation'.¹⁸ We believe that what is needed is a detailed consideration of what the best 'targets' are in educational terms and what funding is required. We consider this should be done through collaboration with the key agencies.

We note that QCA and the National Strategies are key players in the creation of a learning and teaching environment which will influence the demand for innovative practice and product. We note, too, their influence as providers of products and services. We believe that curricular and pedagogic development is likely to provide new commercial opportunities which could support a market in transition.

5.2 Quality

Work carried out on pedagogic quality was agreed in the first report to the Secretary of State (May 2004). CAB set out a research agenda on quality (Report No 1 to the Secretary of State, 4.1, p15) and recommended that one of the goals should be to draw lessons from 'what works' in terms of (i) teacher practice and (ii) content design and characteristics. The report went on to state that the potential to evaluate 'what works' depends on understanding the different dimensions of quality. The Secretary of State approved the recommendation and asked Becta to take this work forward.

Becta has developed two generic contributions to enable a better understanding of the pedagogic quality of e-learning, and we discussed these at the June CAB meeting.

- The first is a common framework for general e-learning quality, which enables all stakeholders to see where and how their work on specific aspects of quality (technical, institutional, content, pedagogy and so on) relates to all of the other components. The purpose of the framework is to provide a common structure and vocabulary from which to develop tools to enable educational practitioners and managers to make more informed decisions about the value of resources and tools to support effective pedagogical practice. The overarching common framework for e-learning quality has identified five broad and distinct categories: infrastructure provision; technical standards; content development; pedagogic affordances and practices; institutional development.
- In the second of these developments, Becta aims to improve the quality of the use of currently available e-learning (whether in the face-to-face classroom, online or in a blended approach) and also the next generation of e-learning, by supporting and informing the design decisions of content developers. To do this, Becta has focused on the pedagogic aspects in the common framework, and identified 10 key principles fundamental to its work on pedagogic quality. CAB noted that, if applied, these principles should help users to choose resources, to design teaching and learning activities that use them, and to support such activity while it takes place.

During its discussions, CAB noted that Becta is planning to develop several 'toolkits' of exemplary materials that highlight evidence of the benefits and challenges of e-learning. CAB noted this as an important and substantial piece of work that involves a wide range of stakeholders, and would support its co-ordination with other major initiatives.

¹⁸ 'Harnessing technology', p44

5.3 Technical standards

At its September 2005 meeting, CAB considered a paper from Becta on technical standards and frameworks for interoperability which are crucial to the systems integration that underpins the vision of the e-strategy. The paper described how interoperability supports the drive for greater value for money and improved efficiency for teachers and institutions.

CAB supported and endorsed the paper's key conclusions and recommendations, which fall under four main headings.

- **Co-ordinated and agreed national standards and specifications for e-learning**

That in association with its partners, Becta will take forward the e-strategy actions to develop a technical standards framework, and will continue to develop and encourage the adoption of a national strategy on open standards.

- **Sustaining cross-sector collaboration**

That different sectors have differing requirements of emerging specifications such as those for e-assessment and e-portfolios. There is a danger that conflicting standards may emerge from different phases of learning, for example in relation to e-assessment, which may constrain management or interoperability. There is a need for greater coherence in this area with all sectors working to a common framework and to provide consistency where appropriate.

- **Adoption**

That strategic support is necessary in the drive to ensure the adoption of technical standards in the education sector, perhaps through inclusion in pan-governmental frameworks such as eGIF and through the vehicle of public procurement policy and activity.

- **Compliance and accreditation**

That recent initiatives have offered best practice guidelines for providers of digital content learning platforms, but mechanisms are required to ensure that these are universally adopted.

CAB recognises the importance of a coherent and open framework enabling flexibility of location, pace and delivery to support the modernising education agenda and suggests that the DfES and Becta seek to encourage compliance with standards and specifications through cross-government channels beyond the education system.

5.4 Accessibility and inclusivity

At its November 2005 meeting, CAB discussed a paper from Becta on accessibility and inclusivity. CAB was informed that the drive for accessibility and inclusivity in the commissioning, design, take-up and use of e-learning in schools over the last five years has resulted in widespread confusion. The confusion stems from a lack of accepted definition of 'reasonable adjustment' (SENDA 2001)¹⁹ and the potential threat of a first legal case. The paper presented the view that a literal interpretation of the law has resulted in conflicting approaches in education, which represent a risk to the effective embedding of e-learning. There are also implications in respect of the aims and objectives of the DfES e-strategy in its pursuit of innovation and the affordance of quality learning opportunities for all students.

CAB agreed with the conclusions, which focused on the following four main areas, and provide a progressive step towards achieving the Government's personalisation agenda.

- Guidance for schools to support accessibility planning undertaken in partnership with all key stakeholders to achieve a single interpretation and application of accessibility and inclusivity requirements in ICT.
- Guidelines for content developers and commissioners of content that contain

¹⁹ 'Reasonable adjustment' is a term in the legislation relating to the legal obligation of educational institutions to make provision for students with special needs and disabilities to be able to access the available educational opportunities. Institutions are encouraged to take reasonable steps and make 'reasonable adjustments' to meet this end *whether or not their current cohort of students includes those with disabilities*.

sufficient flexibility to ensure that innovation, good pedagogic standards and quality are not compromised or stifled. There should also be an inherent understanding that e-learning content is for use in education, and is distinct from public-access websites whose purpose is to provide access to information.

- Investigation into how to fill gaps in the market which would otherwise be commercially unviable for the private sector. Research and partnership work with the industry to develop good practice exemplars could serve to stimulate new approaches and new innovations. Developers of products supported centrally would be required to share their experiences, challenges and solutions for the benefit of the whole market.
- Greater emphasis on the role of the teacher in making reasonable adjustments to support inclusion and increased recognition of the range of practices, techniques and resources that the teacher has available to support the use of e-learning. Industry should support teachers more effectively by making clear, considered statements about the suitability of their products for students with different types of learning need, and by providing practical options for alternative uses of the content.

CAB notes that if this work is to be taken forward successfully there is a need for a strong partnership between the relevant communities.

5.5 Summary and recommendations

Recommendation 5 – Approaches to gap and opportunity analysis and innovation

CAB believes that curriculum and pedagogic development should contribute to the development and promotion of innovative and effective product and practice. CAB notes that the development and promotion of innovation should also be seen in the context of smoothing market transition to a post-eLC environment.

QCA and the National Strategies have a significant role in curricular and pedagogic development and, as a consequence, should influence the e-learning resource market. The National Strategies are also providers of free content for use in the classroom. There is a need, in CAB's view, to ensure that government agencies and initiatives disseminate information to the market about their activities. Knowledge of the direction of curriculum and pedagogic development, for example, would help to establish gaps, and thus identify opportunities for suppliers. Therefore CAB recommends that the DfES in conjunction with its agencies and partners:

- develop a dialogue with suppliers to ensure that they have access to intelligence which will help them to be responsive to educational change.
- disseminate knowledge of their activities which could impact on the market, in a timely manner.
- consider and co-ordinate the range of actions which could foster innovative and effective product and practice (this should include Becta, QCA, the National Strategies and those involved in training and CPD, such as the TDA and NCSL).

Recommendation 6 – Technical standards, accessibility and inclusivity

CAB has explored issues around technical standards, accessibility and inclusivity. CAB notes the importance of compliance with open standards and specifications across Government and its agencies. We also recognise that further support for suppliers and users on accessibility and inclusion is essential. There is clearly a need to promote accessibility and inclusion and to increase knowledge and understanding of legislation and its implications. Therefore CAB recommends:

- That the DfES establish approaches to ensure wider adoption of:
 - generic standards and specifications required by education across other government departments
 - educational standards by industry and intermediaries for schools – for example,

through Cabinet Office strategies such as the e-Government Interoperability Framework (eGIF). This is crucial to enabling systems integration that underpins the vision of the e-strategy.

- That the DfES create a public-private sector working group remitted to explore interpretations and implications of the Special Educational Needs and Disability Act (SENDA) for suppliers and users of educational ICT resources, and to give particular consideration to the concept of 'reasonable adjustment'. The findings of the working group would be used to develop appropriate guidance for both suppliers and users.



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