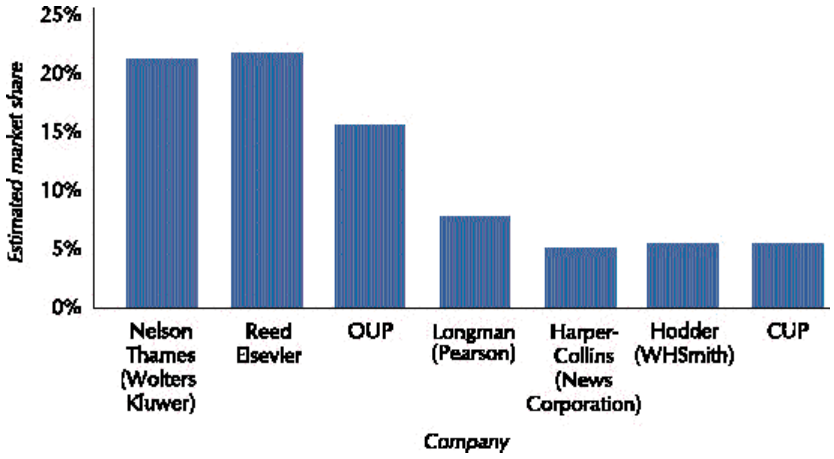
schools, there are nearly 10 million pupils, split fairly evenly between the two[34]. The estimated spend on textbooks in England and Wales in 2000/1 was approximately £4,000 per primary school and £21,000 per secondary school[35]. We therefore estimate the value of the UK textbook sector for 2000/1 to be in the region of £200 million[36]. Expenditure on school textbooks is expected to grow by around 4% per annum[37].

4.19 Nelson Thornes (a subsidiary of Wolters Kluwer) and Reed Elsevier are the two largest suppliers in the UK textbook sector. Figure 3 presents an estimate of the shares for the major suppliers of school textbooks.

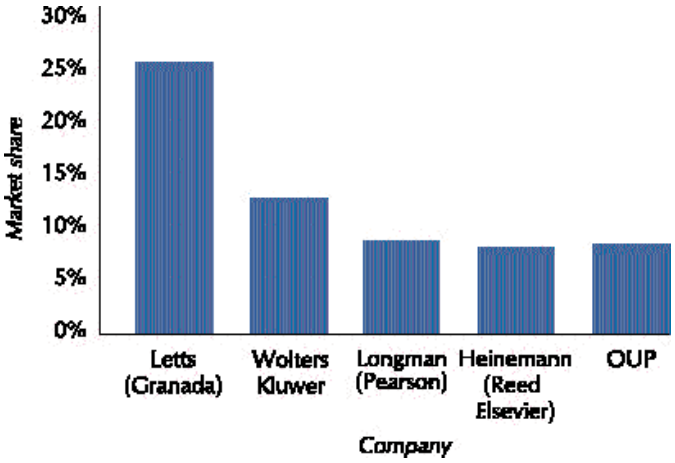
Figure 3: Estimated shares for school textbook suppliers in 1999[38]



Source: The Publishers Association; "Commercial Opportunities for Education in the UK", Spectrum Report, April 2000.

4.20 In 1999, sales of revision and study guides generated approximately £30 million[39] in the UK, with Letts (now part of Granada Learning) being the sector leader. The majority of these products are sold to the home sector. We understand that this sector will have increased in size to around £40 million in 2002. Figure 4 presents an estimate of the shares for suppliers of revision and study guides in the UK.

Figure 4: Estimated shares for suppliers of revision and study guides in the UK in 1999



Source: "Commercial Opportunities for Education in the UK", Spectrum Report, April 2000.

34 According to a BESA report, school pupil numbers are expected to increase by around 2% between 1999 and 2006.

35 "Schoolbook spending in the UK 2000/2001", The Publishers Association. The corresponding figures were slightly lower in Scotland and slightly higher in Northern Ireland

36 This estimate may exclude expenditure on other types of printed resources e.g. story books, library books.

37 "UK book publishing market development", Market & Business Development, 9 August 2001.

38 Differences exist in the year-ends for each company.

39 "Commercial Opportunities for Education in the UK", Spectrum Report, April 2000.

4.21 BBC Worldwide's share of the revision and study guide sector is estimated to be no more than a few percentage points[40].

CD-ROMs

Sector structure and nature of competition

4.22 A key driver of the CD-ROM sector has been the penetration of PC's in homes and at schools. In the early stages of development, some of the CD-ROM products were little more than textbook offerings configured to a disc. Following the widespread introduction of multimedia PC's in the UK in the mid-nineties (particularly at home), the CD-ROM sector expanded quickly. As a result, CD-ROMs have improved in quality, for example, via the use of graphics, animation and audio.

4.23 Although the current range of CD-ROM products on offer is large, it has been noted that [41]:

"The most commercially successful CD-ROMs have provided applications, content and classroom activities directly related to the curriculum".

4.24 Educational printed resource suppliers (in particular the major publishing groups) have used CD-ROMs as a means of diversifying their product portfolio. Established brand names and reputation give educational resource suppliers leverage in a sector where quality and reputation is important. The business is very competitive both in the schools and home sectors and in particular for the GCSE subjects.

4.25 In May 2000, one of the major suppliers of CD-ROMs to the home sector, Dorling Kindersley, was taken over by the Pearson Group. However, the sector is still more fragmented than the educational printed resource sector.

4.26 Sales of CD-ROMs and DVDs typically occur via the high street[42] (e.g. WH Smiths, Dixons, PC World) or through direct sales to schools. The BBC informed us that, in general, educational printed resources achieve higher margins than CD-ROMs[43].

4.27 The CD-ROM sector is faced with an uncertain future as technological developments continue apace. The increased uptake of the internet and DVD systems has put into question the long-term viability of educational CD-ROMs.

Estimated size & shares

4.28 Total expenditure by UK schools on curriculum software and electronically delivered content was recently estimated to be £70-80 million[44]. We believe that this estimate includes sales of CD-ROMs and online resources. Our own analysis of total sales of educational software resources broadly concurs with this estimate, although we cannot be sure that the definitions used in both cases are the same. According to research by BESA, primary and secondary schools in Britain were estimated to have spent about £40 million on educational ICT software during the school year 1999/2000[45]. Assuming a 10% growth in expenditure on educational ICT software for the following two years and increased NGfL grants[46], we estimate that total sales of educational software resources (e.g. CD-ROMs, online resources etc.) will approach £80 million in 2002[47].

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40 Its most successful products are the GCSE Bitesize Revision books.

41 "E-Learning in the UK Education Marketplace", Electronic Publishing Services & David Taylor Associates, April 2001.

42 It is noteworthy that educational CD-ROMs are often included with the sale of new PCs.

43 Based on meeting notes with Andy Ware (Director of Children's Learning, BBC Worldwide) and Mark Peters (Management Strategy Consultant with BBC Factual & Learning), 13 February 2002.

44 UBS Warburg Broker report, January 2002.

45 This includes expenditure on educational online resources and other such services. However, schools that received special funds for ICT implementations may not have included all of their expenditure in the general ICT budget. Also some software expenditure may have been included in the teaching materials budget, which is not reflected in this figure. Finally, software bundled with new computer purchases is unlikely to be included in this figure.

46 Total NGfL funding for educational ICT software could be worth £40 million in 2002/3 based on schools spending 15% of their 'Grant A' Standards Funds (approximately £280 million in 2002/3). This compares to just under £30 million in 2001/2, assuming that schools spent exactly 15% of their 'Grant A' Standards Funds (£188 million).

47 This estimate does not take into consideration the impact of eLCs. See Section VIII for further details.

4.29 Retail sales[48] of educational and children's software (e.g. CD-ROMs, DVDs) reached an estimated value of £40m in 1999[49]. According to research undertaken for the BBC, the size of the home learning sector via CD-ROMs was estimated to be around £26 million in 1999[50]. With growth fairly limited, we estimate that sales of educational CD-ROMs and DVDs outside of schools will be around £35 million this year.

4.30 RM has an estimated 40% share in the provision of curriculum software and electronically delivered content[51]. Granada Learning is probably in second place in this sector given its strong presence in the schools CD-ROM sector. In the home learning sector, Dorling Kindersley (part of the Pearson Group) is one of the leading suppliers of CD-ROMs and other software products. In 1999, it had an estimated share in the household CD-ROM sector of just over 10%[52].

4.31 BBC Worldwide has an established presence in the CD-ROM sector, although we understand that its share of both the home and schools sectors is no more than a few percentage points.

Online

Sector structure and nature of competition

4.32 The educational online resource sector is in its early stages of development, but growing fast. The current state of the sector was recently described by one deputy head teacher as[53]:

"a bit of a mix and match."

4.33 Commercial educational online suppliers generate most of their revenues from subscription fees, advertising and sponsorship, product sales and content licensing. In addition to the supply of content, the internet is also used as an additional sales and marketing channel for 'offline' suppliers.

4.34 There is a growing trend for suppliers to provide both content and the means by which to view it. For example, we understand that Reed Elsevier and Riverdeep have signed distribution agreements for UK schools with RM. Given the high (and increasing) levels of access to the internet, firms that provide online learning materials to schools are also able to supply learning materials to households. However, some suppliers provide their online services solely for use in schools.

4.35 It is evident that two of the key drivers in the sector are technology-related: the increased penetration of PCs and internet connections in homes and schools; and the improvements to the distribution network. At present, many schools have inadequate ICT infrastructure to support certain web-based service offerings. As the penetration of multimedia PCs and fast internet connections in schools and at home increases, so more content will be migrated to this delivery platform.

4.36 A report by Datamonitor on Online Education in January 2000 characterised five main types of educational online sites, these being:

- Reference sites — searchable databases or archives of content. An example of such a site is the Britannica Online;
- Discovery sites — archived reference material in conjunction with informal creative content e.g. articles;
- Academic sites — sites offering content that is based around the National Curriculum e.g. Learning Alive;
- Portal sites — aggregations of the materials offered from the previous types of site, and packaged as part of an online service provider's portal e.g. Freeserve; and

48 i.e. those aimed predominantly to households.

49 "Educational Software", Mintel, May 2000. This includes some software that is not purely educational in content.

50 "Commercial Opportunities for Education in the UK", Spectrum Report, April 2000.

51 UBS Warburg Broker report, January 2002. Based on a market size of approximately £80 million, this would equate to revenues of over £30 million per annum.

52 "Commercial Opportunities for Education in the UK", Spectrum Report, April 2000.

53 "Broadband in schools — never mind about the content", Sally Watson, www.silicon.com, 30 January 2002.

- Supersites — the most advanced types of site offering high levels of interactivity and content aggregation.

4.37 The BBC's proposed Digital Curriculum service would be classified as a 'Supersite'. As we explain in more detail in Section V, the functionality of the BBC's service will be limited to that essential for delivering a coherent, universally available and manageable system. Unlike other products in the sector, it will not incorporate a fully functional information learning management system (iLMS). In particular there are no plans to offer student personalisation, nor will it interface with school management information systems. Other companies such as Digital Brain (AutoPortal), Pearson (KnowledgeBox) and Granada (LearnWise), already deliver content and fairly sophisticated iLMS.

4.38 The educational online resource sector is somewhat fragmented with suppliers coming from a variety of backgrounds, ranging from publishing groups to broadcasting companies to internet start-ups. Many of the web-based courses currently available are part of more integrated offerings by offline educational resource suppliers. Examples of the offerings provided by different suppliers include:

- Granada Learning (part of the Granada Media Group) supplies educational online content to both schools and homes through products/services such as LearnWise and Anglia Campus;
- the commercial broadcaster, Channel 4 has a website 'channel4.com/learning' containing educational online resources for teachers, pupils and home learners and a guide to Channel 4's programmes for schools;
- the public service broadcaster, BBC, offers a range of online study materials on its website aimed at all age groups for both schools and homes. The schools section offers learning material, revision material and weekly articles for parents;
- the newspaper company, The Guardian, has set-up a website, Learn.co.uk, that provides content and lesson plans matched against the National Curriculum;
- the ICT company, Microsoft, has developed the Encarta Class Server, a type of iLMS aimed at primary and secondary schools. Some of the partnering firms providing content are Granada Learning, Reed Elsevier and Helicon Publishing; and
- the ICT company, RM, one of the UK's largest suppliers of educational ICT products has launched the LearningAlive website for schools and has distribution agreements with various content producers.

4.39 There are many smaller companies that are active in this sector as well such as Spark Learning and SAM Learning. Some have designed services for use in schools and homes, such as Schoolfriend.co.uk, which offers individual learning for children between the ages of four and thirteen. There is also strong potential competition from suppliers of educational online resources from the United States (e.g. Pearson).

4.40 Some of the educational online resource suppliers have also been involved with government online learning projects. One such project is "Grid Club", a website funded by the DfES and managed by Channel 4. Grid Club is designed for 7-11 year olds and offers educational games and activities, as well as help with homework and projects. The NGfL portal currently offers a network of web sites that provide content to support learning, teaching and training[54].

Estimated size & shares

4.41 As noted above, expenditure on curriculum software and electronically delivered content by UK schools was recently estimated to be worth £70-80 million[55].

4.42 Given the low penetration of paid for online content in schools, it is unlikely that existing educational online resources in UK schools generate more than about £5-10 million per annum. We have no

[54] Initiatives that are specific to the nations include: Nine Connect — online resources for Northern Ireland schools and educational organisations; NGfL Scotland — resources for teachers, parents and pupils funded by the Scottish Executive Education Department; and VTC Cymru — the Virtual Teacher Centre for the delivery of the Welsh curriculum.

[55] UBS Warburg Broker report, January 2002.

estimate of the revenues generated by educational online resource sales outside of schools, although we would not expect these to be significant at present.

4.43 It is very difficult to estimate the shares of suppliers of educational online resources using value-based measures (e.g. turnover). Furthermore, the BBC does not charge for any of its educational online content. We have also been unable to obtain data on other measures of output (e.g. website 'hits', usage hours) in order to estimate the total size, and the BBC's share, of the online sector. However, it is noteworthy that it's the BBC's strong brand and its track record of producing high quality educational output, means that its online services are likely to appeal to a wide variety of learners.

Other mediums for delivering educational content

4.44 The various other mediums for delivering educational content in the UK include:

- **Educational television (and video) programming.** The BBC has a strong tradition in providing high quality educational and factual programming across the whole spectrum of learners ranging from the very young to the old. Commercial broadcasters such as ITV, Channel 4 and CNN also provide educational and factual programming (including videos). Furthermore, many companies from outside the broadcasting industry provide both educational CD-ROMs and videos.
- **Satellite delivered broadband content.** Espresso Broadband delivers regularly updated, cross-curricular educational content via satellite to UK schools. The content can be viewed on a school PC. Estimates suggest that around 450 primary schools and 40 secondary schools already use the company's software[56] .

Related markets

4.45 The paragraphs above described the sectors most directly affected by the BBC's proposed Digital Curriculum service. The BBC's proposed Digital Curriculum service will also affect other parts of the industry and the wider economy. These so-called 'related markets' include:

- **ICT hardware and infrastructure.** The BBC's proposed Digital Curriculum service would require the use of multimedia PCs and a well developed schools (or regional) local area network. Without sufficient network speed and PC storage capacity, the full benefits of the service will not be realised.
- **Teacher training.** For educational software resources to be used to their maximum effect in schools, teachers must have a sufficient level of confidence and training in ICT. Significant amounts of money have already been spent hiring commercial organisations to provide teacher ICT training. We understand that £230 million is available to fund ICT training for teachers and school librarians in the UK, through a register of approved commercial suppliers.
- **IT labour markets.** The new generation of school leavers will rely more heavily than ever on having developed an excellent knowledge of ICT for application in working environments. Employers and the economy as a whole will benefit from an increased skill base in the labour market.

Conclusions

4.46 Our research has revealed that:

- the combined value of the educational resource sectors is currently estimated to be around £350 million;
- the revenues generated by educational online resources are currently very small relative to the size of the printed and CD-ROM sectors;
- the level of funding for educational software resources is increasing well above the rate of inflation;
- many of the educational resource sectors are highly fragmented;

56 "Broadband in schools — never mind about the content", Sally Watson, www.silicon.com, 30 January 2002.

- whilst individual companies have strengths in particular sectors, no one organisation has a strong foothold across all the educational resource sectors;
- the BBC has a small share of all the educational resource sectors described above;
- the BBC's proposed Digital Curriculum service would be rolled out during a period of considerable technological change and convergence; and
- there are related markets that would be impacted by the BBC's proposed Digital Curriculum service.