

Microsoft Vista and Office 2007

Interim report with recommendations
on adoption and deployment

January 2007

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Summary and recommendations 1

- 1.1 Becta announced in January 2006 that it intended to conduct a review of Microsoft's Vista operating system and Office 2007 productivity suite. In announcing the review Becta indicated that it would also look carefully at what advice it would give in relation to the advantages of coherence and continuity in the ICT institutional infrastructure, as opposed to, for example, investing resources in constantly acquiring the most recent versions of products.
- 1.2 The review comprised a detailed analysis of the new functionality in Vista and Office 2007, and an evaluation of the usefulness of that functionality when set against a number of key criteria for deployment.
- 1.3 Extensive interoperability tests were also carried out between different versions of Microsoft's products and between Microsoft products and competitor offerings. Becta commissioned Oakleigh Consulting to carry out the key aspects of this work.
- 1.4 We summarise below the main findings in respect of:
 - Vista
 - Office 2007
 - Competitor office productivity suites and interoperability issues.

Vista

- 1.5 The overall evidence points to a significant number of issues that need to be addressed before Vista should be considered for deployment in educational institutions. Priority issues include:
 - Coherence across the educational ICT estate
 - Relevance of additional functionality
 - Suitability of ICT infrastructure
 - The nature and scale of deployment costs.
 - 1.6 The overall key messages and associated recommendations on deployment in an educational environment are that:
 - The enhancements in Vista add value but do not justify its early deployment in the educational environment
 - Early deployment is considered high risk and strongly recommended against
 - 1.7 The key areas under which Vista was evaluated were:
 - Additional functionality
 - Coherence of the ICT estate
 - Costs of deployment.
- Additional functionality**
- 1.8 The Vista operating system has been significantly enhanced – as compared to, for example, Windows XP – with key advantages in the areas of access and security.
 - 1.9 A comprehensive features analysis was carried out on Vista and the results confirmed that there were no 'must have' features.
 - 1.10 For the education sector, the key issues regarding the functionality in Vista that emanated from the analysis by Oakleigh were the following:
 - Many (27%) of the added features are available without the cost and effort of upgrading from Windows XP to Vista (including some such as IE7 and Windows Media Player which are free of charge).
 - Many useful functions in elements of the Vista package (Media Centre functionality, for instance, and security tools such as Bitlocker drive encryption) are not in widespread use in the education sector.
 - The impact of digital rights management on the approach to authentication and authorisation infrastructure needs to be evaluated further.
 - The costs versus the benefits of the Aero interface are questionable, since most ICT-based teaching and learning now takes place in applications (browsers, curriculum tools and so on) not at the operating-system level.
 - As education establishments move to a managed-service approach, the increased number of platforms within the legacy estate will potentially add significant costs.
 - A key driver for the uptake of Vista in education may be the move by producers of education software away from the current

32-bit technology to exploit the far more powerful 64-bit technology – this move is, however, still some considerable time away.

Coherence of the ICT estate

- 1.11 Becta has identified coherence – having a relatively consistent technical infrastructure – as an important strategic objective. The implications for coherence regarding the deployment of Vista include a recognition that:
- Over half of the current infrastructure could not run Vista even with the Aero graphics engine turned off (estimate 55%) and virtually none of the current infrastructure could run Vista with Aero switched on (estimate 0%–6%). However, in initiatives such as Building Schools of the Future, where new ICT provision is being considered, this restriction would be of less relevance.
 - The version of Windows XP generally agreed to be the most stable became available with the release of Service Pack 2 in August 2004, almost three years after the launch of the product. Windows XP was developed from an existing operating system whereas Vista is a wholly new operating system. It seems reasonable therefore not to deploy Vista until it has a demonstrably stable and secure track record.

Costs of deployment

- 1.12 Oakleigh developed a model for Becta which could be used to estimate the ‘order of magnitude’ costs of deploying Vista across the school ICT estate, taking into account the following factors:
- Hardware costs – the cost of upgrading or replacing PCs which do not meet the Vista-capable specification
 - Vista licence costs – the total bulk licensing cost to deploy Vista, taking into account the extent to which education establishments have already paid for the right to upgrade. The figures therefore include an element of ‘sunk costs’

- Hardware upgrade labour – an approximation of the time and staffing to upgrade the hardware
- Software upgrade labour – an approximation of the time and staffing to perform the Vista installation and rollout
- Training, deployment and testing costs associated with deploying the product at the institution level.

- 1.13 Based on the size of the school ICT estate in England in 2004, this gave indicative costs of deploying Vista as some £160 million. This estimate does not include the additional graphics cards necessary to take account of the Aero interface, which would add significantly to the cost base.
- 1.14 At the institution level the costing data indicates that for a typical primary school to deploy Vista across its ICT estate would generate order of magnitude costs in the region of £4,000. For a secondary school, the cost of a similar deployment would be in the region of £25,000.

Recommendation

The new features of Vista add value but do not justify early deployment in the educational ICT estate. Educational institutions are strongly advised to consider the findings of Becta’s final report on Vista before considering any wide-scale deployment.

If any institution has a need for early deployment, it should ensure that it has fully and carefully considered the issues identified in this interim report including the technical, financial, and organisational implications for the institution, of any proposed deployment.

Recommendation

Microsoft should facilitate a limited number of pilot activities to clarify what the benefits of deploying Vista in an educational institution would be and what level of costs the deployment would generate. Ideally, these pilot activities would be completed in time to inform Becta’s final report on Vista.

Office 2007

1.15 As with Vista, the Office 2007 product was evaluated from the perspective of:

- Additional functionality
- Coherence of the ICT estate
- Costs of deployment.

Additional functionality

1.16 Office 2007 was found to very stable when running on Windows XP, and most of the evaluation was carried out on this platform. Windows XP would thus be a suitable platform for Office 2007 and indeed for any of the competitor products evaluated. The functionality in Office 2007 was very comprehensive and it compared extremely well with all competitor products evaluated. However, it is worth noting that six of the nine competitor products evaluated were able to provide about 50% of the functionality of Office 2007.

1.17 Of the 176 new features of Office 2007 identified, many are considered to be of more use to a business than to an educational institution. Following their analysis, Oakleigh concluded that none of these new features were 'must have'.

Coherence of the ICT estate

1.18 Most office applications in use in education establishments are already Office 2000 or better (Office XP or Office 2003). There is therefore a high degree of consistency across these earlier versions regarding the design of the user interface (UI).

1.19 With Office 2007, Microsoft introduces a new UI for Word, Excel, PowerPoint and Outlook, but there is no 'classic' mode – that is to say, it is not possible to revert to the earlier UI. Should mixtures of Office versions be deployed (which could occur, for example, when educational institutions purchase new equipment with Office 2007 pre-installed), this will cause usability issues as users will be faced with different UIs depending on which machine they are using at any given time.

Costs of deployment

1.20 It is not necessary to run Vista in order to deploy Office 2007. Machines already running

Microsoft Office 2003 should not need any hardware upgrade. The most significant requirement is to be running Windows XP with service pack 2 or higher. It is the operating system upgrade to XP (where necessary) rather than Office 2007 that is likely to cause education establishments to upgrade hardware.

1.21 Oakleigh believe that, in general, systems purchased in or after 2001 should be capable of running Office 2007.

1.22 Oakleigh developed a model for Becta which could be used to estimate the 'order of magnitude' costs of deploying Office 2007 across the school ICT estate by taking into account the following:

- Hardware upgrade costs – The estimated hardware upgrade costs for moving to Office 2007 which would flow from the need to ensure that the systems are capable of running Windows XP with Service Pack 2.
- Office 2007 licence costs – the total bulk licensing cost to deploy Office 2007, taking into account the extent to which education establishments have already paid for the right to upgrade to this version
- Hardware upgrade labour – approximation of the time and staffing to upgrade the hardware
- Software upgrade labour – approximation of the time and manpower to perform the Office 2007 installation and rollout
- Training, deployment and testing costs associated with a deployment at the individual school level.

1.23 The Oakleigh model indicated estimated costs of some £4,000 for a typical primary school to deploy Office 2007 effectively across its ICT estate. For a typical secondary school the costs of deploying Office 2007 would be around £26,000. Taking the school system in England as a whole, it is estimated that to deploy Office 2007 would cost in the region of £167 million.

1.24 If deploying both Vista and Office 2007, however, educational institutions should expect to see some economies of scale – particularly in relation to hardware upgrade costs. We shall give further details on this in our final report.

- 1.25 On the deployment of Office 2007, Oakleigh commented:
- ‘We have set out earlier a number of issues to be considered in relation to the deployment of Office 2007. They should be read in the context that we found no significant benefit in deploying the product at this time.
 - Deployment should in any event be dependent on the satisfactory outcome of the interoperability and digital divide issues set out later in this report.’
- 1.26 Based on the work by Oakleigh, Becta has not yet been able to identify any realistic justification for the early adoption of Office 2007 across the educational ICT estate. Recognising that many educational institutions already have perfectly adequate office productivity solutions, we believe that there would need to be a strong case to justify the necessary investment.

Recommendation

Microsoft should develop a compelling business case to underpin any rationale for deploying Office 2007 in UK education. The business case should take account of the nature and scale of deployment of existing office productivity tools, and should also identify the additional educational capabilities that Office 2007 would offer to offset the additional costs. Ideally such a business case would be available before Becta finalised its recommendations in relation to Office 2007.

Recommendation

Educational institutions are recommended to await the publication of Becta’s final report before making definitive decisions in relation to the wide-scale deployment of Office 2007.

If any institution has a need for early deployment, it should ensure that it has fully and carefully considered the issues identified in this interim report including the technical, financial, and organisational implications for the institution of any proposed deployment.

Competitor office productivity suites

- 1.27 As part of their work, Oakleigh carried out a comprehensive analysis of the functionality available in the following office suites:
- Microsoft Works
 - Corel WordPerfect Office X3
 - OpenOffice
 - StarOffice
 - Easy Office
 - One SE
 - Lotus SmartSuite
 - Google online productivity tools
 - Ability Office
- 1.28 A recent development in the marketplace has been the launch of a range of budget software products by Tesco, which includes a re-branded version of the Ability office suite (v 4.0). Oakleigh indicated that the Ability product mirrors Microsoft Office very well, but provides just the core functionality. Whilst the functionality that is provided is probably sufficient for the average home user, some basic features are currently lacking. An updated version is expected in early 2007.
- 1.29 Google continues to make announcements in relation to productivity software and is delivering early versions of possible online solutions. Although there are clearly security and usability issues with purely web-based solutions and in spite of their current functional limitations, it is possible that over time such products may become the major competitor.
- 1.30 Taking account of a range of factors Oakleigh have advised that, with the exception of Works, Ability Office and the current online offering from Google, the remaining six competitor products offered about 50% of the functionality available from the Office 2007 suite. This 50% included functionality that met or exceeded basic requirements in relation to word processing, spreadsheets, and presentation development.
- 1.31 It is also clear from Oakleigh’s evaluation of Office 2007 that a significant element of its new functionality was not considered essential in an educational context. Nevertheless, the

additional functionality available in Office 2007 has certainly resulted in a product which is functionally more advanced than competitor products.

- 1.32 It should be noted that, in reality, the major obstacle to the deployment of Office 2007 may well be that many users are satisfied with the functionality of their existing versions of Office, and therefore do not see the need to upgrade.

Recommendation

Educational ICT suppliers should seek to facilitate choice to schools, ensuring that computers for this market are shipped with a choice of Office productivity suites on the desktop. Ideally this choice should include an open-source offering.

Interoperability

- 1.33 Becta has examined interoperability from two perspectives: the actual experience of schools and users as well as on the basis of technical testing.

Experience of users

- 1.34 In other work for Becta, schools were asked what problems they experienced in transferring files between home and school. Most respondents noted problems 'sometimes' or 'often' – 52% in primary schools, rising to 78% in secondary and up to 82% in further education. This may reflect the increased reliance on electronic file transfer between home and the education institution as students get older and become more independent in their approach to study.

Technical testing

- 1.35 Technical testing by Oakleigh indicated that interoperability issues are most prevalent between versions of Microsoft Office applications – for instance when an MS Word 2000 user at school tries to load an MS Word 2003 document generated at home or, very commonly, when someone who uses MS Word 2000 at school tries to load a document into MS Works at home. This finding is to be expected because the vast majority of office documents are generated on Microsoft applications.

- 1.36 Oakleigh conducted a series of some 1,200 interoperability tests, focusing both on interoperability with existing Microsoft products and also on interoperability with competitor products. The testing of Office 2007 was initially done on beta software, and the results confirmed when release versions of Office 2007 became available.

- 1.37 In general terms, interoperability between versions of MS Office was satisfactory, with the exception of occasions where failure was due to the use of the 'track changes' feature.

- 1.38 However in relation to interoperability between Office 2007 and competitor products (such as StarOffice or OpenOffice), all tests failed as none of these alternatives supported the new Office 2007 file formats. Additionally Microsoft's current adoption of the OpenDocument Format (ODF) format is limited: it will initially at least be an add-in rather than natively supported. These factors could lead to a situation where a move to Office 2007 by education establishments could make it more difficult for learners and their parents to use non-Microsoft products at home to share documents.

- 1.39 Using the default file format of Microsoft Office 2007 therefore has the potential to exacerbate 'digital divide' issues as a result of the loss of interoperability with free-to-use products. Becta considers that educational institutions should only consider deploying Office 2007 when they are assured of its interoperability with alternative products including free-to-use products such as OpenOffice.org.

- 1.40 Oakleigh are clear that interoperability is currently seen as a major barrier to the adoption of products or combinations of products.

- 1.41 In view of the rapidly changing interoperability environment and the increasing interest in ensuring interoperability and avoiding supplier lock-in, Becta believes that it is essential to keep this area under regular review. Becta will set out more detailed advice on interoperability in its final report on Vista and Office 2007.

Recommendation

Microsoft should seek to improve the compatibility of Office 2007 with earlier versions of MS Word, and should also consider how the interoperability with MS Works could be further improved.

Recommendation

Microsoft should move to provide native support for the ODF file format as soon as is practical and at the latest by mid 2007.

Recommendation

Schools and colleges should only deploy Office 2007 when its interoperability with alternative products is satisfactory.

Next steps

- 1.42 Following publication of this interim report on Vista and Office 2007, Becta intends to hold further consultations on the key recommendations. These arrangements will build on discussions held during the review, and will involve both Microsoft and suppliers of competitor products – including free-to-use products.
- 1.43 We intend to hold discussions with the ICT industry to identify what practical steps could be taken to improve the availability of competitor products.
- 1.44 In our final report, for each of our recommendations we shall set out details of the progress that has been made in addressing the concerns identified. We will pay specific attention to how interoperability between Office 2007 and competitor products evolves.
- 1.45 We also intend to discuss our final recommendations and overall assessment with the Office of Government Commerce and the Office of Fair Trading.
- 1.46 We anticipate publication of our final report no later than BETT 2008

Introduction and background

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- 2.1 Becta is the Government's lead partner in the strategic development and delivery of ICT for the schools and the learning and skills sectors. Becta provides strategic leadership in the innovative and effective use of ICT to enable the transformation of learning, teaching and educational organisations for the benefit of every learner.
- 2.2 One of Becta's strategic objectives is to develop a national digital infrastructure and resources strategy leading to greater national coherence, improved reliability and affordability that is sustainable in the longer term. As part of that work, Becta has a responsibility to act in the interests of schools and colleges to ensure best value for money in the procurement of quality ICT products and services.
- 2.3 A part of its work on facilitating best value for money in the provision of ICT facilities, Becta has developed a model comprising four essential services which will combine to deliver a vision for ICT in schools and colleges. This model – the national digital infrastructure – addresses ICT provision through:
- Data services
 - Learning services
 - Connectivity services
 - Infrastructure services.
- 2.4 Adoption of the national digital infrastructure is expected to improve the benefits derived through the use of ICT by facilitating:
- Improved data flows within and between schools, both regionally and nationally
 - Unified and interoperable systems which provide a stable platform for learning and innovation
 - A reduced technical burden on institutions that will allow them to focus on the use of technology rather than on its management
 - Coherent and reliable technology at an affordable and sustainable price.
- 2.5 Commenting on the infrastructure services layer, Becta has confirmed that providers need to focus on supplying appropriate ICT products, services and resources that institutions really value and are prepared to buy. Providers should thus focus on delivering coherent and reliable services at an affordable price that institutions recognise as sustainable.
- 2.6 In January 2006 Becta announced that it intended to conduct a review of Microsoft's new operating system (subsequently named Vista) and the update to its office productivity suite (subsequently named Office 2007). The announcement of the review confirmed:
- 'Becta will also look carefully at what advice we give in relation to the advantages of coherence and continuity in the ICT institutional infrastructure, as opposed to, for example, investing resources in constantly acquiring the most recent versions of products.'*
- 2.7 The context for this review, therefore, is whether there are key capabilities in these products that make their deployment necessary in the context of delivering the objectives of the national digital infrastructure.

Review methodology

- 3.1 To ensure appropriate rigour, depth and breadth to its review, Becta initiated a wide range of activities encompassing:
- A detailed review of Microsoft Vista
 - A detailed review of Microsoft Office 2007
 - Evaluation of competitor products
 - A range of interoperability tests.
- 3.2 Becta commissioned Oakleigh Consulting to carry forward key aspects of this work. In relation to the assumptions underpinning their various findings, Oakleigh have advised:
- 'In all the different aspects of this assignment (benefits, comparisons, interoperability, implementation and deployment costs) we had to make assumptions based on the information we had available to us at the time. Based on experience, you should be aware that both generally, and with particular reference to costs, assumptions tend to produce a lower cost than in reality. Therefore please treat these assumptions accordingly.'*
- 3.3 Oakleigh carried forward the bulk of their work during the period June to September 2006, when only beta versions of the Vista and Office 2007 products were available. Oakleigh therefore revisited their findings in December 2006, when final release quality products were available. Oakleigh have confirmed that their review of the release versions did not affect in any material way any of their earlier findings.
- 3.4 In developing their advice, Oakleigh consulted within the ICT education marketplace, and beyond. They also drew on research by the Gartner Group.
- 3.6 Becta also asked Oakleigh to establish the extent to which institutions that have been paying for the right to upgrade to Vista via subscription agreements will be able to deploy the product effectively and to access the enhancements it offers.
- 3.7 In relation to Vista, Oakleigh sought information from providers of educational ICT managed services and from those developing educational content about their plans to ensure that their products were compatible with Vista, to update their products to take advantage of the features of Vista or to develop new content specifically to take advantage of the Vista environment.

Evaluation of Office 2007

- 3.8 Oakleigh were asked to identify the additional facilities in Microsoft's new productivity suite and the extent to which such facilities are appropriate and useful to the wider education community. Becta also wanted to know the extent to which the range of features and functionality now available in competitor products to Microsoft Office make them suitable alternatives for use in the education sector.
- 3.9 At Becta's request, Oakleigh conducted a range of 'interoperability' tests (independent of suppliers) to determine whether file and data sharing is a significant impediment to the wider uptake of competitor products.
- 3.10 The remainder of this interim report sets out Becta's initial recommendations on:
- Microsoft's Vista operating system
 - Microsoft's Office 2007 productivity suite
 - Competitor products and interoperability.
- 3.5 Becta asked Oakleigh to establish the technical and functional enhancements envisaged in Vista and, in view of the diversity of the existing ICT estate, the extent to which those enhancements would bring benefits to educational users.

Evaluation of Vista

Microsoft's Vista operating system 4

- 4.1 The work carried out by Oakleigh for Becta has identified a range of issues which will need to be addressed before Microsoft's Vista product can be deployed across the educational ICT estate. The key areas explored were:
- Additional functionality
 - Coherence of the ICT estate
 - Costs of deployment.

Additional functionality

- 4.2 Set out below are Oakleigh's key findings in relation to Vista functionality. These include a high-level overview of the new features, details of the methodology and the outcome of Oakleigh's more detailed analysis.

High-level overview

- 4.3 On the new Vista functionality, Oakleigh have made clear that it has been significantly enhanced – as compared with Windows XP, for example – with notable advantages in the area of access control, security and system reliability. Other features identified by Oakleigh included:
- Resource protection features have been added to prevent potentially damaging system configuration changes.
 - Parental controls have been made more sophisticated; for example it is now possible to restrict the time that a computer can be accessed.
 - Windows Service Hardening prevents Windows services from potentially damaging operations on file systems, registry or networks – for example preventing the entry of malware by piggybacking on system services.
- 4.4 In relation to the use of audio in Vista, Oakleigh advised that Universal Audio Architecture had been further developed to reduce the need for third-party drivers and to increase the overall stability and reliability of audio.
- ### Methodology and Outcome
- 4.5 In developing their detailed assessment, Oakleigh identified some 180 new features in Vista. As Microsoft has not documented all the new features, Oakleigh indicated that this list, while extensive, might well be incomplete.

- 4.6 Oakleigh identified 15 principles by which to assess the deployment of Vista in an educational context, weighted those principles for importance and agreed the outcome with Becta.
- 4.7 Oakleigh then assessed the new features against the weighted principles to categorise them as:
- 'Must have' – a feature whose deployment would be essential
 - 'Should have' – a feature which should be implemented if at all possible
 - 'Could have' – a feature which is more 'nice to have' than necessary
 - 'Wait' – a feature whose benefit to education is not clear at this stage
 - 'None' – a feature with no discernible benefit to education.

- 4.8 Based on this more detailed approach, Oakleigh advised Becta that there were no 'must have' features in Vista. They also advised that about 60% of the new functionality was either 'should have' or 'could have'. The remaining 40% of the new features were assessed as either 'wait' or of no discernible value.

- 4.9 Oakleigh's overall conclusion in respect of the scope and relevance of new functionality was:

'The new features, while definitely adding value in the areas of security and reliability, did not justify a rapid adoption.'

Key issues

- 4.10 Becta asked Oakleigh to identify the key issues for the education sector which emanated from their analysis. Oakleigh indicated in relation to functionality cost and deployment that:

On functionality

'Many useful functions in elements of the package not in widespread use in education sector eg Media Centre functionality and other technical enhancements such as Encrypting File System, Bitlocker drive encryption, Transactional NTFS, etc.'

'Many (27%) of the added features in Vista are available without the cost and effort of upgrading from Windows XP to Vista (including some FOC) eg IE7, Windows Media Player, etc.'

'Impact of digital rights management on approach to authentication and authorisation infrastructure needs to be further evaluated.'

'Key driver for Vista in education may be the move by producers of education applications to exploit 64-bit technology – this is clearly still some considerable time away.'

On cost

'Costs versus benefits of Aero interface – most time is now spent in applications (eg browser, curriculum tools etc) not at OS level.'

'As education establishments move to a managed service approach the disparity in underpinning infrastructure will potentially add significant costs.'

On deployment

- 4.11 Oakleigh made the point that the education sector has a low tolerance of technical issues and there are concerns over both the stability of, and transition to, Vista. Oakleigh were of the view, based on experience to date, that a deployment of Vista in advance of a demonstrably stable product, typically the equivalent of XP Service Pack 2, would be a high-risk strategy.

Coherence of the ICT estate

- 4.12 Becta has identified coherence – having a relatively consistent technical infrastructure across the educational ICT estate – as a key policy objective underpinning the national digital infrastructure. Mixing operating system versions can add both complexity and cost. Indeed Microsoft recognises the benefits of coherence in their subscription licensing agreements which promote standardisation across the entire organisation as a beneficial outcome of such agreements.
- 4.13 As Microsoft Windows XP has been the predominant operating system (OS) since 2001, it is likely that the education system currently

has the most 'coherent' OS platform since the introduction of ICT into education establishments in the early 1980s. On the implications on the coherence of the current ICT estate of deploying Vista, Oakleigh commented:

'Much of the current infrastructure could not run Vista even with the Aero graphics engine off (estimate 55%) and virtually none of the current infrastructure could run Vista with Aero switched on (estimate 0%–6%)'

- 4.14 The version of Windows XP generally agreed to be the most stable became available with the release of Service Pack 2 in August 2004, almost three years after the launch of the product. Windows XP was developed from an existing operating system and in comparison Vista is a wholly new operating system. It seems reasonable therefore not to deploy Vista until it has proved over time to be demonstrably stable and secure.
- 4.15 It is clear that any deployment of Vista will have potential implications on existing coherence and it will be important to explore this fully before taking any decisions to deploy.

Costs of deployment

- 4.16 The costs of deploying Vista will clearly be heavily dependent on the hardware specification necessary to deliver an acceptable level of performance to users.
- 4.17 On their final analysis of Vista performance, based on a release-quality version of the product, Oakleigh commented:
- 'We were surprised that Vista did not perform better on the medium/high-specification PC, the specification of which should have supported Vista according to the recommendations from Microsoft (modern CPU [800MHz or better], 512MB RAM, 112MB graphics).'*
- 'All of this serves to confirm our original recommendations that wide-ranging upgrades will be required to the [educational ICT] estate before Vista can successfully be rolled out.'*

4.18 It was necessary to make many costing assumptions in this area so Oakleigh developed a model to calculate 'order of magnitude' costs and to ensure that, if appropriate, assumptions can be further refined. In identifying the scale of the costs which would be incurred in deploying Vista across the educational ICT estate, the Oakleigh model took into account the following:

- Hardware costs – the cost of the hardware components in upgrading or replacing PCs which do not meet the Vista-capable specification
- Vista licence costs – the total bulk licensing cost to deploy Vista, taking into account the extent to which schools have already paid for the right to upgrade via the School Agreement
- Hardware upgrade labour – approximation of the time and staffing to perform the hardware upgrades, based on technician time at £20 an hour
- Software upgrade labour – approximation of the time and staffing to perform the Vista installation and rollout, based on technician time at £20 an hour
- Training, deployment and testing costs associated with deploying the product at the institution level.

4.19 The Oakleigh model then assessed order of magnitude costs of bringing the educational ICT estate up to the same level of coherence under Vista as is believed to be the position under XP. These costs are based on the assumption that the Aero interface is not required, so it does not include the high-specification graphics card that Aero would require.

4.20 Taking account of the factors identified above, and based on the available information regarding the age and size of the educational ICT estate in 2004, the costing model indicates that, for a typical primary school, updating to the new environment would cost around £4,000 and for a typical secondary school the costs would be about £25,000.

4.21 These are 'broad brush' estimates and it is important to note that, for any school or college, the actual costs for deploying Vista will depend on the age and scale of its ICT estate, the nature of its current Microsoft licensing arrangements, whether it needs Aero functionality, and the range and age of the software products it intends to run on the updated environment.

Recommendation

Microsoft should develop a compelling business case to underpin any rationale for deploying Vista in UK education. The business case should take account of the nature and scale of the existing ICT infrastructure and the objectives Becta has identified in relation to the national digital infrastructure.

Recommendation

Microsoft should facilitate a limited number of pilot activities to clarify what the benefits of deploying Vista in an educational institution would be and what level of costs the deployment would generate. Ideally, these pilot activities would be completed in time to inform Becta's final report on Vista.

Recommendation

The new features of Vista add value but do not justify early deployment in the educational ICT estate. We therefore strongly advise educational institutions to take into account the findings of Becta's final report on Vista before considering any wide-scale deployment.

If any institution has a need for early deployment, it should ensure that it has fully and carefully considered the issues identified in this interim report including the technical, financial, and organisational implications for the institution of any proposed deployment.

Overall Conclusions on Vista

4.22 Setting out their key recommendations on Vista, Oakleigh have advised Becta as follows:

- Enhancements definitely add value but do not justify rapid deployment and this is recommended against
- Early deployment is considered extremely high risk and strongly recommended against. Re-visit Vista again in 2008 to see if factors have changed and if it can be deployed in 2009.
- On the basis of current understanding, the total cost of deployment is significant, the risks are high and the benefits are far from clear.
- Small-scale piloting of Vista may be appropriate to inform thinking regarding future deployment.

- 5.1 The work Oakleigh carried out in respect of Office 2007 mirrored their approach to evaluating Vista. Oakleigh identified a range of issues to be addressed before Microsoft's Office 2007 product should be deployed across the educational ICT estate. The key areas Oakleigh explored were:
- Additional functionality
 - Coherence of the ICT estate
 - Costs of deployment.

Additional functionality

- 5.2 Office 2007 was found to be very stable on XP, with most of the evaluation carried out on this platform. Windows XP would be a suitable platform for deployment of Office 2007. The application functionality in Office 2007 was more comprehensive than that available in competitor products. However, it should be noted that all competitor products offered the basic functionality: word processing, spreadsheets and presentation production.
- 5.3 Oakleigh identified 176 new features of Office 2007, but considered that many of these functions were of more use in a business than an educational application. Oakleigh assessed the new functionality using the same basis as that for Vista, that is, the extent to which features were considered:
- 'Must have' – a feature where deployment would be essential
 - 'Should have' – a feature which should be implemented if at all possible
 - 'Could have' – a feature which is more 'nice to have' than necessary
 - 'Wait' – a feature whose benefits to education are not clear at this stage
 - 'None' – a feature with no discernible benefit to education.
- 5.4 Oakleigh did not identify any 'must have' features in Office 2007. About 40% of the identified features were considered 'should have' or 'could have'. Some 60% of the new functionality in Office 2007 was categorised by Oakleigh as 'wait' or of no value to education.

Coherence of the ICT estate

- 5.5 Most office applications in use in education establishments are already Office 2000 or better (Office XP or Office 2003). There is therefore a high degree of consistency of user interface (UI) across these versions.
- 5.6 With Office 2007, Microsoft introduces a new UI for Word, Excel, PowerPoint and Outlook, but there is no 'classic' mode – that is to say, it is not possible to revert to the earlier UI. Should mixtures of versions be adopted (which could occur, for example, when educational institutions purchase new equipment with Office 2007 pre-installed), this will cause difficulties as users will be faced with different UIs, depending on which machine they are using at any given time.
- 5.7 While education establishments may prefer either the classic or the new UI, they are unlikely to want to operate both. Generally, though, the new UI has been well received, found to be stable and may well become the dominant standard for applications of this sort.
- 5.8 Oakleigh confirmed their view that it is not necessary to run Vista in order to deploy Office 2007. Machines already running Microsoft Office 2003 should not need any hardware upgrade. The most significant requirement is to be running Windows XP with Service Pack 2 or higher. It is anticipated that it is the OS upgrade to XP (where necessary) rather than the move to Office 2007 that will cause education establishments to upgrade hardware.
- 5.9 Oakleigh believe that, in general, systems purchased in or after 2001 should be capable of running Office 2007.

Costs of deployment

- 5.10 It was necessary to make many assumptions in arriving at the costs for deploying Office 2007 across the educational ICT estate, so Oakleigh again developed a model to calculate 'order of magnitude' costs.
- 5.11 The Oakleigh model estimated the costs of deploying Office 2007 by taking into account the following:

- Hardware upgrade costs – The estimated hardware upgrade costs for moving to Office 2007 flow from the need to ensure that the system is capable of running Windows XP with SP 2. A school or college that had already upgraded all its systems to this level (or indeed to the level necessary to support Vista) would incur no additional hardware costs.
 - Software licence costs – The estimated licensing cost to deploy Office 2007, taking into account the extent to which education establishments have already paid for the right to upgrade via a subscription agreement
 - Deployment costs – An approximation of the time and staffing to perform the Office 2007 installation and rollout, based on technician time at £20 an hour
 - Hardware upgrade labour – Approximation of the time and staffing to perform the hardware upgrades, based on technician time at £20 an hour
 - Training and testing – Approximation of the time necessary to do basic pre-deployment testing and user training.
- 5.12 Assuming that hardware upgrades would be necessary, the Oakleigh model estimated the costs of deploying Office 2007 across the infrastructure of a primary school at some £4,000.
- 5.13 If hardware upgrades were necessary, then typical costs for a secondary school would be some £26,000.
- 5.14 Taking the school system in England as a whole it is estimated that to deploy Office 2007 across all schools if hardware upgrades were necessary would be in the region of £167 million.
- 5.15 The same caveats regarding the ‘order of magnitude’ nature of these costs apply here as to the Vista evaluation. It should be noted that if deploying both Vista and Office 2007, educational institutions should expect to see some economies of scale, particularly in relation to hardware upgrade costs. Our final report will give more details on the likely costs of deploying both Vista and Office 2007 across an ICT estate.
- 5.16 On the deployment of Office 2007, Oakleigh have commented:
- ‘We have set out earlier a number of issues to be considered in relation to the deployment of Office 2007. They should be read in the context that we found no significant benefit in deploying the product at this time.*
- 5.17 Deployment should in any event depend on the satisfactory outcome of the interoperability and ‘digital divide’ issues set out later in this interim report.
- 5.18 Becta has not been able to identify any convincing justification for the early adoption of Office 2007 across the educational ICT estate. Recognising that many educational institutions already have perfectly adequate office productivity solutions, we believe that there would need to be a strong case to justify the investment.
- Recommendation**
- Microsoft should develop a compelling business case to underpin any rationale for deploying Office 2007 in UK education. The business case should take account of the nature and scale of deployment of existing office productivity tools, and should also identify the additional educational capabilities that Office 2007 would offer to offset the considerable additional costs. Ideally, such a business case would be available before Becta finalises its recommendations.
- Recommendation**
- Educational institutions are recommended to await the publication of Becta’s final report before making final decisions in relation to the widespread deployment of Office 2007.
- If any institution has a need for early deployment, it should ensure that it has fully and carefully considered the issues identified in this interim report including the technical, financial, and organisational implications for the institution of any proposed deployment.

Competitor office productivity suites and interoperability issues

6.1 Becta asked Oakleigh to compare the functionality available in Microsoft's Office 2007 productivity suite with the functionality that competitor products offer. The products evaluated were:

- Microsoft Works
- Corel WordPerfect Office X3
- OpenOffice
- StarOffice
- Easy Office
- One SE
- Lotus SmartSuite
- Google online office tools
- Ability Office.

6.2 The competitor products fell into five broad categories:

- Products freely available to anyone (such as OpenOffice.org)
- Products freely available to education users (such as StarOffice)
- Products available to education at a reduced cost (such as Lotus SmartSuite)
- Products aimed at the home/consumer market (such as Ability Office or Microsoft Works)
- Products available as an online service (such as Writely from Google).

Functionality

6.3 Taking account of a range of factors, Oakleigh have advised that – with the exception Microsoft Works, the current offerings from Ability Office (v 4.0) and the current online offering from Google – the remaining six competitor products offered about 50% of the functionality of the Office 2007 suite. However, the functionality available in these six products met or exceeded basic requirements in relation to word processing, spreadsheets, and presentation development.

6.4 A recent development in the marketplace was the launch of a range of budget software products by Tesco, including a re-branded version of the Ability office suite. Oakleigh indicated that the Ability product mirrors

Microsoft Office very well, but provides just the core functionality. Whilst the functionality that is provided is probably sufficient for the average home user, some basic features are currently lacking. An updated version is expected in early 2007.

6.5 Google continues to make announcements in relation to productivity software and is delivering early versions of possible online solutions. Although there are clearly security and usability issues with purely web-based solutions, in spite of their current functional limitations it is possible that such products may become the major competitor over time.

6.6 Oakleigh's evaluation of Office 2007 indicated that a significant element of its new functionality was not considered essential in an educational context. Nevertheless, it is clear that the additional functionality available in Office 2007 has resulted in a product which is functionally more advanced than competitor products.

6.7 It should be noted that, in reality, the major obstacle to the deployment of Office 2007 may well be that many users are satisfied enough with the functionality of their existing versions of Office and do not see the need to upgrade.

6.8 In Oakleigh's view, emerging initiatives may offer a more coherent solution, with elements from disparate products coming together to deliver a usable alternative to the Microsoft Office suite.

Recommendation

Educational ICT suppliers should seek to facilitate choice to schools, ensuring that computers for this market are shipped with a choice of Office productivity suites on the desktop. Ideally this choice should include an open-source offering.

Interoperability

6.9 Becta has examined interoperability from two perspectives:

- Based on the actual experience of schools and users
- On the basis of technical testing.

Experience of users

- 6.10 In other work for Becta, schools and colleges were asked what problems they experienced in transferring files between home and school. Most respondents noted problems 'sometimes' or 'often' – 52% in primary schools, rising to 78% in secondary schools and up to 82% in further education. This may reflect the increased reliance on electronic file transfer between home and the education institution as students get older and become more independent in their approach to study.

Technical testing

- 6.11 Comprehensive technical testing by Oakleigh indicated that interoperability issues are most prevalent between versions of Microsoft Office applications – for instance when an MS Word 2000 user at school tries to load an MS Word 2003 document generated at home or, very commonly, someone who uses MS Word 2000 at school tries to load a document into MS Works at home. This finding is to be expected because the vast majority of office documents are generated on Microsoft applications.
- 6.12 A key issue emanating from interoperability testing related to the fact that there are no Office 2007 import readers in competitor products. Additionally, the limited current adoption of the ODF format by Microsoft (it will initially be an add-in rather than natively supported) could lead to a situation where a move to Office 2007 by education establishments could make it more difficult for learners and their parents to use non-Microsoft products at home to share documents.
- 6.13 Oakleigh indicated that in their view Microsoft's commitment to the ODF interoperability standard changed during the course of this assignment. At the beginning of the assignment, Microsoft's commitment to ODF was assessed by Oakleigh as being "in denial". At the end of the assignment it was assessed by them as "grudging acceptance" of the ODF standard. This Oakleigh argued indicates an unstable, dynamic commitment to interoperability from Microsoft and that until a provably stable position has been established this area is treated with caution. Oakleigh comment:

"We recommend that education establishments should consider a move to Office 2007 only

when it offers via its default file formats at least the current level of compatibility with competitor products as do earlier versions of the Microsoft Office suite.

'The social inclusion factor, as stated earlier, must be considered, as if this is not correctly managed at a technology level, interoperability could prevent wide use of Office-type applications in many different scenarios. Interoperability ideally should be invisible across many different products, at many different release levels and irrespective of location and PC hardware used, to ensure a wide take-up of these types of applications.

Our recommendation is that, given our caveats re beta software and unavailability of converters, interoperability be currently seen as a major barrier for adoption of products or combinations of products.'

- 6.14 For their part Microsoft argues ODF is a less satisfactory solution to interoperability as compared to Open XML and that notwithstanding that view they have taken steps to facilitate the development of an ODF translator that will initially be offered as an add-in to Office 2007. Taking account of the rapidly changing interoperability environment and the increasing interest in ensuring interoperability and avoiding supplier lock-in, it is essential to keep this area under regular review. Becta will therefore set out more detailed advice on interoperability in its final report on Vista and Office 2007.

Recommendation

Microsoft should seek to improve the compatibility of Office 2007 with earlier versions of MS Word, and should also consider how the interoperability with MS Works could be further improved.

Recommendation

Microsoft should move to provide native support for the ODF file format as soon as is practicable and at the latest by mid 2007.

Recommendation

Schools and colleges should only deploy Office 2007 when its interoperability with alternative products is satisfactory.

Next steps

- 7.1 Following publication of this interim report on Vista and Office 2007, Becta intends to hold further consultations on the key recommendations. These arrangements will build on discussions held during the review, and will involve both Microsoft and suppliers of competitor– including free-to-use – products.
- 7.2 We intend to hold discussions with the ICT industry to identify what practical steps could be taken to improve the availability of competitor products.
- 7.3 In our final report, for each of our recommendations we shall set out details of the progress that has been made in addressing the concerns identified. We shall pay specific attention to how interoperability between Office 2007 and competitor products evolves.
- 7.4 We also intend to discuss our final recommendations and overall assessment with the Office of Government Commerce and the Office of Fair Trading.
- 7.5 We anticipate publication of our final report no later than BETT 2008.



Millburn Hill Road
Science Park
Coventry CV4 7JJ

Tel: 024 7641 6994

Fax: 024 7641 1418

Email: becta@becta.org.uk

URL: <http://www.becta.org.uk>

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