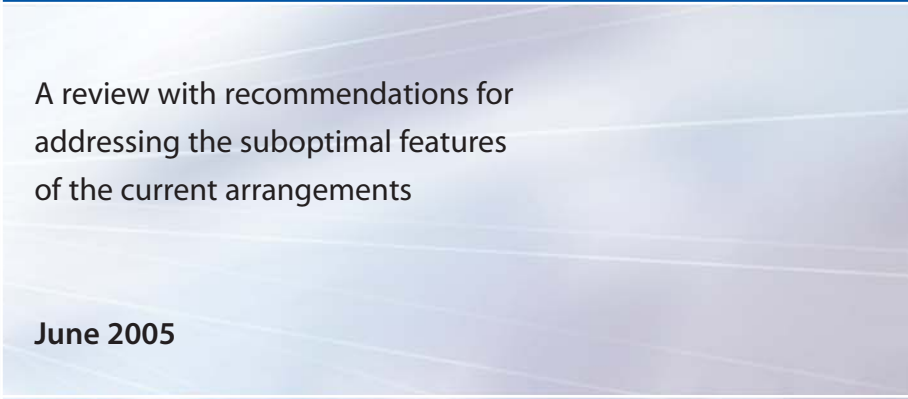# School Management Information Systems and Value for Money

A review with recommendations for addressing the suboptimal features of the current arrangements

June 2005

Becta

British Educational Communications and Technology Agency

Contents

1.1 Becta's initial work on improving the value for money flowing from the considerable sums being invested in the school Management Information System (MIS) marketplace identified a significant number of suboptimal features of the current arrangements.

1.2 Those features included considerable impediments to the exercise of effective choice by schools, increases in the order of 300% over approximately four years in relation to the secondary school licensing costs of the products from the dominant supplier, and the lack of any significant contractual commitment between the dominant supplier and schools/ LEAs regarding the timeliness and quality of software provided.

1.3 We also identified the need for improvements in the way in which the DfES specifies its requirements in relation to the provision of statutory returns, and the need for a greater focus, both in schools and more widely, on the contribution that MIS systems can make to the achievement of broader policy objectives such as efficiency and effectiveness and the driving up of educational standards.

1.4 Following this initial work, we consulted widely with stakeholders including LEAs, MIS suppliers, headteacher organisations and within the DfES in relation to the issues we had identified. We also discussed our initial views with the Office of Fair Trading (OFT).

1.5 On the basis of our wider consultations, we estimate that the total cost of providing and supporting MIS systems in schools in England is at least £180 million annually, and could be much higher. We confirm that there are considerable impediments to maximising the potential value for money flowing from that expenditure. Those impediments span all aspects of the current arrangements including the contractual landscape, the technical environment, the support arrangements and the statutory returns process.

1.6 Our key findings and the associated recommendations for action are set out below. We consider that our various recommendations, which have an impact on all aspects of the current arrangements, are only likely to be effective when they are introduced in a comprehensive and co-ordinated manner.

On The Commercial Environment

1.7 We find that there are considerable impediments to the exercise of effective choice by schools and LEAs, and that this has an impact on competitive pressures and thus on overall value for money. The impediments include the complexity of the MIS procurement process, the lack of supplier-independent interoperability arrangements, and the lack of appropriate contractual protection for schools and LEAs.

1.8 There was evidence that the scale of presence in the marketplace of the dominant supplier raised questions in the minds of some schools and LEAs about the long-term commercial intent of the other providers, thus mitigating against moving between suppliers.

Recommendation 1

1.9 That Becta will conduct a national procurement exercise to establish an EU-compliant framework agreement of approved suppliers of MIS systems and services. The underpinning contractual terms and conditions for approved suppliers should reflect effective choice principles, improved pricing visibility, minimum service levels regarding the quality and timeliness of software updates and support, and conformance to open technical and data standards.

Recommendation 2

1.10   That LEAs be reminded that they should review their existing MIS contracts to ensure that they comply with wider UK and EU procurement obligations, and that, whenever LEAs or schools intend to market test provision, they should use the new national frameworks unless they can demonstrate better value for money elsewhere and compliance with the obligations on open technical standards.

On Interoperability

1.11   We find that interoperability arrangements are effectively dependent on the dominant supplier, which sets the detailed technical, financial and legal framework within which interoperability takes place. We consider that, if unchecked, such arrangements for interoperability have the potential to impede competition and choice not only in the provision of MIS solutions but also in the market for Virtual Learning Environments (VLEs) and Managed Learning Environments (MLEs), and hinder the effective delivery of wider policy objectives in relation to personal learning spaces.

Recommendation 3

1.12   That Becta will establish a supplier-independent and open interoperability architecture to create the opportunity for improved interoperability at the school level and at the LEA or regional broadband consortium (RBC) level. Additionally Becta's interoperability arrangements will draw, to the maximum extent possible, on ongoing work across Government on interoperability standards.

Recommendation 4

1.13   That Becta further explores the potential that the regional aggregation of the interoperability requirements could facilitate the establishment of the Data Services layer envisaged in our Conceptual Architecture.

On Delivering Effective Support

1.14   We find that of the estimated £180 million expended annually on MIS systems, some £55 million is expended on the provision of support to schools in the use of those systems. There is considerable pressure on those resources as a result of the necessity of ongoing technical upgrades, software testing, and supporting the implications of the statutory returns process, all of which mitigate against a focus on the higher-order benefits aimed at institutional improvement. Additionally, relatively few of the LEAs' support teams, taking account of their scale and the resource pressures, are able to support a multiple-supplier environment.

Recommendation 5

1.15   That Becta advises the Department of the importance of incentives to facilitate groups of LEAs merging their MIS support teams or entering into partnership arrangements to ensure, wherever possible, the creation of larger and more cost-effective support teams. This recommendation supports the additional objective of creating arrangements better able to support a multiple-supplier environment, and thus improving the choices available to schools.

Recommendation 6

1.16   Agreeing that there is a an urgent need for an increased focus on the contribution that effective MIS systems can make to institutional improvement and the wider priorities set out in the e-Strategy, It is recommended that Becta will lead in developments aimed at providing enhanced support for LEA teams supporting the use of MIS systems to facilitate school improvement.

Recommendation 7

1.17 Recognising the considerable sums delegated to individual schools, and the continued focus across Government on efficiency and effectiveness, it is recommended that the DfES considers, with Becta, what additional support needs to be provided to ensure school leaders are supported in embedding the use of MIS systems as a tool for school improvement and institutional effectiveness.

On Statutory Returns

1.18 We recognise the significant benefits that have flowed from the move to electronic returns, and the interoperability advantages of DfES initiatives in this area (such as the Common Transfer File). However, the arrangements for the collection of electronic data from schools have now grown in range, frequency and complexity to the point where they are now placing considerable administrative, technical and financial burdens on schools, on LEA support teams and on MIS solution providers.

1.19 Our findings indicate the lack of any direct contractual arrangement (covering such areas as cost, timeliness and quality) between those specifying the data requirements (often the DfES) and the MIS providers developing solutions. The costs of development, deployment and support are passed directly on to schools via increased charges by suppliers. This arrangement makes it virtually impossible to understand the costs of the Department's information needs, absorbs significant development resources, and mitigates disproportionately against smaller providers.

Recommendation 8

1.20 While noting the considerable progress made in recent years in the electronic collection of data from schools via the statutory returns process, Becta recommends that the department accepts that there is now an overwhelming case for fundamental improvements in these arrangements.

Recommendation 9

1.21 There should be a revised commercial framework for the collection of statutory returns data which reduces the considerable financial and administrative burden the process currently places on schools, LEAs and MIS suppliers. This revised commercial framework would require that:

- as a first step, the Department should enter into a formal memorandum of understanding (MOU) with each of the providers of school-wide MIS systems. The timescales agreed via the MOU should recognise the considerable practical challenges associated with the steps currently necessary to upgrade software on individual school systems. We therefore believe that there should be appropriate representation from LEAs when establishing that MOU.

- once established, the MOU should be developed and enhanced to provide a comprehensive framework for the technical specification of these returns, taking full account of emerging cross-government standards.

- on the establishment of that comprehensive framework, the Department should then establish separate contractual arrangements for statutory returns through which it contracts directly with suppliers, imposing quality and timeliness thresholds on providers. The costs of meeting the Department's needs via the statutory returns process should therefore no longer fall to schools.

Summary and Next Steps

1.22 Recognising that our recommendations are compliant with the criteria for intervention in the marketplace which have recently been set out in the e-Strategy, and that following acceptance of our final report we now propose the following actions:

- The commencement of an EU-compliant procurement process for approved MIS suppliers via a request for information

- The publication of our more detailed technical proposals on interoperability, and a dialogue with the ICT supply side, leading to agreement

- Detailed discussions with the DfES and the ICT supply side regarding the MOU on statutory returns and the other steps necessary to move to the new contractual arrangements for statutory returns

- Consultation with school leaders, LEAs and the ICT supply side in relation to the nature, scale and extent of support required to fully embrace the school-improvement potential of MIS systems

- Further discussions with the OFT in relation to the competition implications of our report and the resultant procurement.

1.23 Our report has identified a range of factors that are inhibiting the ability of schools, LEAs and MIS suppliers to maximise the benefits flowing from the considerable sums being invested in school MIS systems.

1.24 We have set out a comprehensive range of recommendations and associated next steps, which, if taken together, will not only address those inhibiting factors, but provide a platform through which key priorities identified in the e-Strategy can more easily and effectively be delivered.

2.1 In setting out its vision for a 21st-century education system, the DfES has identified five key aims:

- Personalisation and choice
- Flexibility and independence
- Opening up services
- Staff development
- Partnerships.

2.2 Those key aims, delivered through strategies for reform across all sectors, are dependent for their successful delivery on the effective deployment and use of ICT. The DfES in its e-Strategy identified the key system-wide contribution of ICT as:

- transforming teaching, learning and child development, enabling children and learners of all ages to meet their highest expectations
- connecting with hard-to-reach groups in new ways
- opening up education to partnerships with other organisations
- moving to a new level of efficiency and effectiveness in our delivery.

2.3 Overall the ICT contribution is to be delivered through a series of sector-wide actions underpinned by system-wide priorities. The e-Strategy identified six priorities, and we set out below the crucial contribution that effective school MIS systems will need to make to the delivery of three of those six priorities.

2.4 On the whole, however, the single most important system-wide contribution that school MIS systems can make to driving up standards, in the context of a system predictated on very significant delegation of resources to the individual institution, is to provide front-line managers at the institutional level with the tools to enable them to improve efficiency and effectiveness in the broadest sense, and to improve the performance of their schools as learning institutions.

2.5 This could, for example, be through the use of MIS systems to reduce the administrative burden on school staff, or by making more efficient use of expensive teacher time through more effective timetabling. It could be by facilitating a more individualised learning approach by matching curriculum resources to particular teaching and learning activities, or by making a wide range of assessment and analysis tools available to teachers so that they can better understand the attainment of the pupils in their care. It may be by providing appropriate online access for parents as part of a wider initiative to improve home–schools links and thus enhance the contribution parents can make to their children's education.

2.6 Overall, therefore, we estimate that MIS systems will be crucial to institutional effectiveness and, as we set out below, to the delivery of at least three of the six priorities of the e-Strategy.

Priority 1 – An integrated online information service for all citizens

2.7 A key milestone in the delivery of Priority 1 is that by 2007 parents and pupils are able to access online applications for places and for support. Priority 1 also identifies the need for parents to be able to monitor and support children's learning online. For this to be effectively and meaningfully delivered, much of the core information required to populate these online systems will need to come, via open interoperability standards, directly from school MIS systems.

2.8   The school systems will need to contain relevant, timely and accurate information about the school, its staff, its curriculum and pastoral arrangements, and the pupils in its care. This implies that school MIS systems will need to be reliable, functionally rich, widely used and effectively integrated into the day-to-day administration and management of both the institution and the learning it delivers. Our findings on interoperability and on effective support, therefore, have particular relevance for the delivery of Priority 1.

Priority 2 – Integrated online personal support for children and learners

2.9   Priority 2 identifies the need for integrated online personal support for learners, and envisages the provision for every learner of a personalised online learning space that can encompass a personal portfolio. It also envisages the development of better approaches to, and use of, e-assessment to improve assessment for learning, enabling learners to better self-manage their e-learning, and supporting learners' progression.

2.10   It is difficult to see how this priority could be successfully delivered other than through effective integration between school MIS systems, the systems that provide the online learning spaces, and those being developed to support e-assessment.

2.11   Additionally MIS systems which currently tend to focus on institutional needs will need renewed investment to ensure they develop the capability to focus on the needs of the individual learner and on making more information accessible from outside the school.

2.12   This supplier investment will require the confidence of the wider MIS marketplace that there are reasonable opportunities to market and sell the products, and thus recoup development costs. Our findings on impediments to competition and choice and on the need for open supplier-independent interoperability standards are particularly relevant here.

Priority 5 – Establish a leadership and development package for organisational capability in ICT

2.13   This priority envisages the need to develop a school-focused national self-assessment framework comprising models of e-enabled schools, so that leaders can identify where they are in relation to ICT progression, what their next step should be, and the support available to assist them. Crucially it also envisages the need to embed ICT within the overall approach to school improvement.

2.14   A key element of that embedding and the better use of support must be to better exploit the potential of school MIS systems to assist in the process of internal review and development planning. This will require that schools move beyond the use of their MIS systems to capture input and edit data simply or wholly to be used to meet the needs of the statutory returns process. Instead, schools should focus on the potential of the systems to select, analyse and organise information and to facilitate informed decision-making and more effective leadership, contributing directly to more effective learning institutions.

2.15   If such a strategy is to be successfully delivered, it will have implications for the usability, reliability and functionality of school MIS systems and the balance of responsibilities vis-à-vis those who develop such systems, those who support them and those who use them. Our recommendations on the contractual landscape are highly relevant here.

2.16   Embedding the application of MIS data will also have an impact on the structure, composition and role of teams supporting the use of MIS systems in schools. Our recommendations on support envisage an approach where improvements could be achieved by re-focusing much of the existing support effort away from, in many cases, 'never-ending technical upgrades', to support focused on business process and the strategic use of MIS systems. This re-focusing would be widely welcomed by many of those involved in the provision of MIS support and by front line staff in schools.

2.17 Finally, while we have focused on the contribution that effective MIS systems can make to Priorities 1, 2 and 5, they have the potential to contribute also to the achievement of Priority 6, focusing as it does on the need for 'robust and sustainable e-systems'. Priority 6, however, also makes reference to the need for best value in relation to procurement, and this has been further developed recently via the DfES Strategic Technologies initiative. This initiative will have implications for how we address the commercial market for MIS systems, and how and where the exercise of choice is most effectively focused. We shall return to this important issue later in our report.

3.1   As part of our consultation exercise we held a number of meetings with Capita Education Services (CES), the dominant supplier of MIS systems to schools. We also met with senior representatives of RM, SERCO and Pearson. Additionally we issued a survey document to all other MIS suppliers that were known to Becta or the DfES. That survey document sought views in relation to how competition and choice may be improved, any impediments to effective competition, and the wider industry views as to what are the major barriers to competition and choice. We have summarised the key issues emanating from that consultation under the headings of:

- Competition and choice
- Efficiency and effectiveness
- Statutory returns.

Competition and Choice

3.2   The overwhelming view of respondents, other than the dominant supplier, was that there were significant impediments to effective competition and choice in the school MIS marketplace. Taken across the industry, the challenges faced by existing competitors or those seeking to enter the market have been set out below.

3.3   It was argued that the dominant supplier benefits from significant economies of scale, which mitigate against entry to the market by other suppliers because the cost of product development is broadly similar regardless of the size of the user base.

3.4   The pricing/bundling strategy of the dominant supplier results in a position where the marginal costs to schools of acquiring new functionality are very low, thus creating a competition impediment to those providing niche products.

3.5   Switching costs, it was argued, are high, with data migration and training seen as significant impediments by suppliers. There are perceived to be few switching opportunities, with relatively few providers of school-wide solutions on the one hand, and impediments to integrating the products of niche providers on the other.

3.6   Additionally, market growth is low, with revenue growth being generated by increased licensing costs as opposed to new licensing opportunities.

3.7   These difficulties, it was argued, are significantly compounded by the ability of the dominant supplier to charge competitors for access to schools' data, on a per system area, per school, per year basis. This is seen by some industry players as a significant impediment to "open" interoperability.

Efficiency and Effectiveness

3.8   All of the providers of school-wide systems, with the exception of the dominant supplier, argued that there were considerable inefficiencies in the current architectural model for the delivery of school MIS systems. They also argued that the architectural model was a suboptimal approach in the context of meeting the evolving need for greater access to live data, better integration between systems, and stronger control of deployment costs.   The move to centralised, scalable, multi-school databases with web delivery built on industry-standard architecture was what was now required, they argued.

3.9   Such an approach, it was argued, would deliver the opportunities for a single-installation, single point of upgrade, managed MIS service, provided without the need for site visits, and contribute to the policy objectives for appropriate anytime anywhere access by pupils' parents, teachers, etc.

3.10   One industry respondent provided data to indicate the scale of the efficiencies which, in the respondent's view, could be generated by a revised approach – these were estimated as £72 million annually. This estimate was derived by taking account of savings of £16 million in IT equipment in schools via central deployment, reductions of £6 million in technical support in LEAs, and a 10% reduction (£50 million) in school administration staff. We set out Becta's view of the costs of current arrangements later in our report.

3.11   In summary, the view was expressed that in the current marketplace the level of innovation that might have been expected has not been forthcoming and that there appears to be less competitive pressure than might have been expected.

Statutory Returns

3.12   The costs of meeting the statutory returns requirements, which suppliers of school-wide systems universally consider are significant, are a disproportionate burden on smaller providers, absorbing a greater proportion of their development budget and mitigating against their ability to deliver product enhancement and thus compete effectively.

3.13   While many respondents recognised that progress had been made in recent years, there was a view that the statutory returns process only works well where there are adequate lead times, minimal changes, a single point of contact, clear documentation and a communication strategy that provides the same information to all at the same time. Web-conferencing was seen by some as a possible way forward, which would aid communication.

3.14   Areas that generated significant concern included the increasing volume of data required by the statutory returns process, the mechanism via which the process is funded, documentation that lacks clarity or is not delivered on time, and multiple points of contact within the DfES.

Introduction and Background

4.1   In March 2005, following detailed discussions with the four main providers of school-wide MIS systems, Becta issued a consultation document in relation to value for money and MIS systems to the Chief Education Officer of every LEA in England. Additionally we consulted with C2K, the regional MIS support organisation in Northern Ireland.

4.2   Responses were requested by the end of April 2005. A total of 30 LEAs responded, and in virtually every case the response was detailed and comprehensive. The responding organisations are estimated as supporting a total of some 4,000 schools.

4.3   While the vast majority of responses were from LEAs where schools were using the SIMS software supplied by Capita Education Services, (the dominant supplier), responses were also received from LEAs that were using Serco, RM and Pearson products. One respondent was using, in its primary schools, a system developed in-house, and the SIMS software for its secondary schools.

4.4   The vast majority of responses were from LEAs that had a single MIS supplier, under procurement arrangements that had been in place for many years. Responses were also received from LEAs using multiple suppliers, LEAs that had recently changed supplier, and those that were currently contemplating such a move.

4.5   Overall the responses are considered to cover the wide range of scenarios that exist. However, no attempt has been made to follow up non-respondents in any of the various categories or to determine whether the number of respondents expressing a view represents a statistically significant group.

4.6   In essence, the responses represent the views of an opportunity sample of LEAs. We have views of the respondents on the key issues of:

- the quality of MIS software
- benefits flowing from product enhancements
- issues relating to pricing visibility
- issues relating to contract management
- competition and choice in the marketplace
- the statutory returns process.

The Quality of MIS Software

4.7   We consulted on whether or not LEAs thought that they had seen significant improvements in the MIS software available since 1999, and whether they agreed that the products available now bear no resemblance to the software that pertained in 1999. We asked for supporting evidence if that was available. The responses indicated:

- Generally users of products other than those of the dominant supplier were less critical in relation to issues of quality and the timeliness of product delivery, but the limited number of such respondents would not allow a statistically significant comparison to be made.

- In relation to the products from the dominant supplier, there was limited support for the argument that there had been significant improvements in the products available. Those supporting that view pointed to the considerable product re-engineering undertaken and the much more extensive reporting and data-extraction tools now available to schools. This was seen as an investment for the future. Reference was made to the existence of a much wider range of enhancements than those summarised in our consultation document.

- The widely held view is that the leading supplier's software needs improvement particularly in relation to production, development and delivery timescales. The software often contains bugs, and there was considerable support for the view that there is a need for a step-change improvement in quality control.

Additional Benefits from Recent Product Enhancements

4.8 We consulted as to whether or not schools and LEAs are seeing considerable additional benefits as a result of the increased MIS functionality available to them from new software versions. We specifically mentioned areas such as e-procurement, BACS payment, common financial returns, curriculum management, stakeholder communication and automated software updates as illustrative of the areas where new benefits might be being derived.

4.9 We asked respondents to indicate whether they agreed or disagreed that additional benefits are being generated, and to provide any supporting evidence for their conclusion. The responses indicated:

- Overall only a minority of respondents using products from the dominant supplier supported the argument that additional benefits were being derived. Those respondents made specific reference to the advantages of the automatic upgrade facility and to other features which had not specifically been mentioned by Becta. Some respondents recognised that the changes to the underlying architecture would be more long term in their nature, and that overall the system was more useable and flexible than previously.

- The majority of respondents argued that additional benefits had not, at this stage, been derived from recent changes, and cited the following as contributing factors:
  - On too many occasions LEAs considered the software to be of poor quality
  - That some of the new features were not relevant to their LEA
  - That significant ongoing effort was required in respect of the 'data cleansing' necessary to move to the new technical environment
  - That their support teams were fully engaged in deploying software fixes and had not yet been able to fully implement or support the new features
  - That changes in the user interface and a loss of some existing functionality had, in some instances, detracted from usability.

Issues Relating to Pricing Visibility

4.10 It has been argued by Becta that there was a lack of costing data available to customers to support or justify the scale of the movement in prices that has taken place since 1999, and that improved visibility regarding any justification for future price movements must be made available to senior representatives of customers. We sought to determine the agreement or otherwise with those propositions. We asked whether LEAs believed other steps needed to be taken to address price movements, and asked them to outline what those other steps might be. The responses indicated:

- There was little support for the need for increased visibility in relation to pricing from LEAs within which the schools were not significant users of products from the dominant supplier. Generally this group felt they had sufficient clarity in this area, and in many cases

had contractual protection in place in relation to significant price movements. Previous caveats in relation to the relatively small number of respondents in this group are relevant here also.

- There was, however, overwhelming support for the need for improvements in this area from LEA respondents using products from the dominant supplier. This group argued that they needed both a longer term pricing horizon and a much better understanding of the rationale for price increases of the scale that had applied in the recent past. A number of respondents indicated the need for much better information in relation to how the annual charges were allocated across areas such as product development, statutory returns, user support, etc. There was support for the concept of an annual resource plan agreed with representatives of users.

- Some respondents warned of the dangers of driving costs down to the point where innovation was at risk, and some argued that, taking account of the complexity of the solution, current costs were not unreasonable. One respondent indicated that taking account of the range of functionality available the products from the dominant supplier were not expensive.

- A small minority of respondents indicated that the costs of MIS software were not an issue for the LEA as they were passed on to schools.

- Interestingly, the argument was advanced that focusing on pricing visibility addressed a symptom and did not constitute a cure. The essence of this argument was: address the impediments to choice in the marketplace, and suppliers will have to be more sensitive to pricing approaches.

Issues Relating to Contract Management

4.11 Becta had, on the evidence available to it, indicated that, in its view, there was a lack of any significant contractual commitment between the dominant supplier and schools/LEAs regarding the timeliness and quality of software provided. We asked LEAs for their views as to whether or not there should be improved contractual arrangements in place.

4.12 We additionally asked respondents to indicate the nature of the remedies that should flow in the event of contractual commitments not being met. Finally, in this area, we asked LEAs to detail any other aspects of the contractual arrangements with their MIS provider(s) that they considered could be improved. The responses indicated:

- LEAs that specifically mentioned products other than those of the dominant supplier tended to argue that they had satisfactory contract management arrangements in place. The overwhelming view of respondents using products from the dominant supplier was that there was an urgent need for such arrangements to be put in place, and that these arrangements needed to be comprehensive and effective.

- Most of those who had contract management arrangements in place, and many of those who did not, commented on the need to carefully set expectations in this area. It was argued that while stronger contractual protection for LEAs and schools is certainly necessary, possibly underpinned by a service credits regime, ultimately, partnership working with an MIS provider provided the best way forward.

Competition and Choice in the Marketplace

4.13 Becta had suggested that there were considerable impediments to the exercise of effective choice of MIS provider. That view builds on our understanding of the technical, financial, procurement, training and support implications of moving between MIS software providers.

4.14   Additionally Becta had suggested that the need for school MIS systems to integrate with LEA systems can create additional barriers, and indeed some suppliers consider that the LEA MIS team can, on occasion, act as a further barrier to change.

4.15   We asked LEAs to comment as to whether or not they considered that there are impediments to the exercise of effective choice in relation to switching between MIS service providers. We further asked for views on what the impediments are and what steps (if any) need to be taken to facilitate more effective choices. The responses indicated:

- The overwhelming view was that there were significant barriers to the exercise of effective choice by schools. For the most part, the respondents identified these as:

    technical

    financial

    procurement

    support.

- Some LEAs argued that while there were barriers, sufficiently determined schools could overcome them.

- LEAs that had recently moved supplier or that used products from more than one supplier were much more positive about the ability to change than those who had not moved or did not operate a 'mixed economy'.

- Some LEA respondents commented that they believe that the structure of this marketplace is such that, in the absence of change, they doubt whether a number of the existing players will remain active, and this was influencing their approach to exploring alternatives to their current provider.

- The timescales and complexity associated with procurement of MIS systems was cited as an inhibiting factor, with support expressed for the establishment of a national framework of MIS providers that could be used by LEAs and schools. There was some support for the concept of aggregating demand at the RBC level. The view was expressed by a limited number of respondents that Government should procure a national system, which schools should be required to use. One headteacher organisation argued that the time is now right to examine this option again.

- It was the clear view of respondents that difficulties associated with recent migration by the dominant supplier to the .net platform had generated significant difficulties for schools, and highlighted the need for improved protection for schools and LEAs.

- An LEA that had successfully migrated significant numbers of schools to a new supplier commented that the training barrier is not such a challenge as it used to be, and the key remaining barriers are inertia to change and lack of capacity at the LEA level to address the resource implications of choice.

The Statutory Returns Process

4.16   In our consultation document to LEAs, we indicated that the case has been made by most suppliers consulted that there is a need for improvements in the way Government defines its requirements in relation to statutory returns, and that Becta has accepted that there is scope for improvement in these areas. We asked respondents to indicate their views on what improvements may need to be made to the statutory returns process to make it more effective.

4.17   The overwhelming view of respondents was that the approach to the collection of statutory returns data was in urgent need of improvement, and that current arrangements were placing very considerable burdens and costs on software developers, LEAs and schools.

4.18 The key issues highlighted were:

- There is an urgent need to recognise the timescales associated with the development of software to meet the statutory returns requirement, the associated testing and the subsequent deployment of the software to individual schools.

- There is an urgent need for some stability in relation to the ever-escalating requirement for more and more data to be provided by schools.

- A requirement exists for much better co-ordination from within the Department in relation to the information demands made via statutory returns.

- The nature, scale and scope of the development effort necessary to resource ongoing changes in the statutory returns process is such that it is now mitigating significantly against the development of functionality to meet the business needs of schools, as opposed to the information needs of the DfES.

- The current arrangements whereby no contractual relationship exists between the organisation specifying the requirement to be met via statutory returns (usually the DfES) and the companies developing solutions to meet those requirements are inappropriate. A third party, not represented in these discussions (schools), ultimately gets the bill for this process.

- A number of respondents commented on the beneficial impact that the development of specifications for returns such as PLASC and the CTF has had in introducing some technical standards into an otherwise unregulated environment.

- The creation by the DfES of the Rapid Implementation Group was seen by some respondents as a significant step forward.

- A number of respondents indicated that the DfES needs to take more account of the data that could be available at the LEA level before placing demands on schools.

5.1 We set out in the opening section of this report our analysis of the key role that effective school MIS systems will need to play in the delivery of the e-Strategy. Crucially we confirmed that three of the six system-wide priorities identified are significantly dependent on the development, deployment and effective use of school MIS systems. We also referred to the implications of Priority 6 on where choice might be most effectively targeted.

5.2 Our review of the competition environment, however, will have left the reader in no doubt that significant challenges exist if competition and choice are to have real meaning in this area of the ICT marketplace, and if the full potential of MIS systems is to be realised.

5.3 Likewise, our summary of the survey of LEAs confirmed that a significant number of challenges exist in relation to the quality of software, in ensuring the achievement of benefits, on improving pricing visibility and on contract management. This sector also identified that significant concerns exist in relation to the current arrangements for the collection of data via the various statutory returns arrangements.

5.4 In summary, we face major challenges across a wide range of fronts including:
- contract management
- effective choice
- software quality
- interoperability
- the deployment and support models available
- the statutory returns process.

5.5 It is also clear that these areas are significantly interdependent, and addressing them will be challenging, requiring robust and co-ordinated action across a range of fronts. Before we set out our recommendations for moving forward, it is prudent to reflect on the implications of the 'do nothing' approach, and test whether it presents a realistic way forward.

5.6 In relation to contractual arrangements, the likely future impact of allowing the current contractual arrangements (or the lack of them) to continue unaltered, will be:
- continued unchecked upward pressure on costs
- continued poor service to schools regarding the timeliness and quality of software
- a disproportionate share of the ongoing burden of technical testing remaining with LEA support teams and schools
- few if any levers through which to drive the adoption of supplier-independent technical interoperability standards.

5.7 In relation to issues of interoperability, Government has confirmed a policy of making available a 'personal learning space' for all learners, and a move towards personalised learning, which will have an impact on the demand for VLEs and MLEs.

5.8 In the absence of supplier-independent and open arrangements in relation to system interoperability, rigorously enforced, it is likely that the current position of market dominance which pertains in the school MIS marketplace will spread relatively quickly to the VLE/MLE and online learning areas. Potential significant new cost pressures could emerge as the need for integration and interoperability with pupil data expands.

5.9 A further implication of the 'do nothing' scenario will be that the current arrangements for the collection of statutory returns will continue, and it will not be possible to address the suboptimal features of those arrangements, including their impact on schools, software developers and the competitive environment.

5.10   Clearly, and on a broad range of fronts, the implications of the 'do nothing' approach are far from attractive. Equally clear is that there is no simple single answer which will address all the issues identified in our report. We are confident, however, that with firm action, co-ordinated across a range of fronts and involving some degree of give and take by all the stakeholders, significant progress is certainly possible.

5.11   The remainder of our report sets out our recommended approach to change, and the necessary next steps.

6.1   In earlier sections of our report we have set out the views of LEAs, MIS providers, and others in relation to the challenges presented in delivering improved value for money in the MIS space. We have also incorporated a range of views expressed during a well attended presentation and workshop with LEA support providers as part of a meeting of the DfES MIS Rapid Implementation Group.

6.2   In this section we set out our recommended way forward in three key areas:

- The commercial environment
- The technical opportunities
- The support opportunities.

6.3   It is important to understand that, overall, our recommendations on the way forward are unlikely to be successful unless they are applied in a co-ordinated manner. For example, an inability to address the implications of the statutory returns process and place them in a new contractual framework will inevitably mean that we are unable to introduce meaningful service levels into our approved MIS suppliers scheme. The MIS industry would simply refuse to be tied into stronger contractual relationships with LEAs and schools when key elements of its development resource and cost base are dependent on the needs of a third party, not contractually bound by the agreement.

6.4   Likewise, in the absence of an approved MIS providers scheme we are likely to be unable to drive in any meaningful way the introduction of open interoperability standards, placing at risk key aspects of the e-Strategy.

6.5   Finally, our lack of ability to deliver the approved MIS providers scheme will mean that issues of poor software quality will be more likely to remain and that LEA MIS support teams will be unable to focus on the higher level use of the systems to help deliver broader policy objectives.

6.6   We set out below, therefore, the comprehensive and interdependent range of measures which will need to be taken to address the issues we identified earlier in our report and create a basis for delivering key elements of the e-Strategy.

The Commercial Environment

6.7   As we consider the most appropriate commercial environment for the provision of MIS products and services to schools, we need to reflect on the nature of the choices we want to facilitate, and, in the main, who it is that is likely to be exercising those choices.

6.8   Currently, although schools are free to select the MIS systems that best meets their needs, our initial work identified many significant impediments to the exercise of effective choice. In reality very many schools use the system provided via, or at least recommended by, their LEA. Some LEAs, but not all, allow schools to select whatever systems they wish. Some schools, regardless of the view of their LEA, select the systems that they feel are most appropriate.

6.9   The range of advice we received on the best approach to facilitating choice in this market was wide. As set out previously, it ranged from that given by a headteachers' organisation which considered that the time was appropriate to consider a national system procured every three years, to some LEA respondents who were of the view that they would be unable to impose a single system within their authority.

6.10 Some suppliers took the view that such were the impediments to persuading LEAs to consider their products that the only avenue to market, albeit a relatively expensive one, was sales to individual schools. An argument was also made that MIS systems should be procured at the RBC level.

6.11 We believe there are compelling arguments for focusing our commercial approach on the assumption that the major purchaser of MIS systems would be the LEA acting on behalf of, and with the active support of, its schools. We believe such an arrangement is likely to:

- ensure for the public purse the achievement of economies of scale in the purchase of systems and the provision of support

- provide for suppliers a cost effective route to market

- minimise the procurement and technical burdens on schools

- maximise the ability of the LEA to support the use of MIS systems to support school improvement.

6.12 Where an LEA is adhering to our guidance on effective support, which we set out elsewhere in our report, we believe that in all but the most exceptional circumstances schools should work through their LEA in procuring MIS solutions. Schools, or indeed groups of schools, would of course be free to use our approved suppliers, but the costs of purchase and support are likely to be greater than when purchased via the LEA.

Procurement Approach

6.13 A key component in our approach to improving value for money in relation to the provision of MIS systems in schools is the establishment of an EU-compliant framework of approved suppliers of MIS systems and services. We intend to offer approved suppliers under four different categories as follows:

- Category 1 – for providers of school-wide MIS solutions

- Category 2 – for providers of niche products

- Category 3 – for providers of MIS integration and data collection services

- Category 4 – for providers of a package of MIS services to schools.

6.14 A key element of the approval for Category 1 and Category 2 services will be the introduction of common terms and conditions in relation to the supply of MIS software to schools. Under our proposals for statutory returns, those processes would be covered by separate contractual arrangements (including pricing) between software companies and the DfES. Our proposals for the approved suppliers scheme are predictated on that assumption.

6.15 Those common terms and conditions that relate to school-focused functionality will require providers of Category 1 and Category 2 services to commit to improvements in the following key areas:

On Interoperability and Data Access

- Suppliers must conform to the Becta Interoperability Architecture, which will be both open and supplier independent.

- Suppliers must accept that regardless of how the MIS infrastructure is managed or owned, ownership of data rests with the school and not the MIS supplier.

On Service Levels

- Suppliers must offer a choice of service levels to customers, including service levels which incorporate a service credit regime.

- Suppliers must provide appropriate recompense (such as lower costs) to LEAs that participate in acceptance testing of software.

On Pricing

- Suppliers must establish a mechanism by which customers have clear visibility of the forward price of the software (a minimum of two years' rolling visibility will be required, increasing to three years once our recommendations on statutory returns are implemented).

- Suppliers must establish proportionate pricing whereby customers who opt to have an element of their MIS provision via an alternative provider will see costs from their incumbent supplier reduce proportionately.

- Suppliers must ensure that customers understand the basis on which any annual charge is based and varied, and the proportion of that charge which relates to the various services which it encompasses.

On Choice

- Suppliers must work to establish, and then accept, a broadly based code of conduct which will apply where schools or LEAs decide to move between MIS providers for all or part of their provision.

6.16 Taking account of the potential of our interoperability framework, there seems to us no reason why a number of providers of niche products could not come together to offer a school-wide offering based on their individual components, and thus become approved as Category 1 providers. We recognise that approach is likely to be more easily delivered in the primary sector. In any event we intend to specifiy separately the functional requirements of the primary and secondary level.

6.17 Category 3 providers will consist of suppliers able to provide an interoperability architecture on a local or regional basis. They will also be able to offer MIS software development and integration services, and could also be used to provide a range of data integration and data collections services. They could eventually be used by the DfES and others to develop software to automatically collect data from school MIS systems.

6.18 Category 4 suppliers will offer a total hosted MIS service for schools, whereby those schools that do not wish to manage the cost and burden of hosting their own MIS service could have it hosted for them. Additionally the service would include the option to have the service provider deal with routine administrative tasks, such as the statutory returns process. It is envisaged that this service might be most attractive to small primary schools.

Ensuring Engagement by the MIS Marketplace

6.19 Becta and the DfES will use a wide range of measures, to ensure the effective and timely adoption of the approved MIS supplier scheme across the schools ICT marketplace in England. Also, in recognition of its wider UK remit Becta will consult with the devolved administrations in Scotland, Wales and Northern Ireland, regarding the applicability of the scheme in those jurisdictions, and any associated timescales.

6.20 Additionally LEAs will be reminded of their wider EU obligations in relation to MIS procurement, with specific legal advice on the steps they need to take to ensure compliance. The guidance would indicate that LEAs that migrate to Becta-approved MIS suppliers would be able to reduce procurement costs and demonstrate compliance with their EU obligations.

The Technical Opportunities

6.21 Under 'technical opportunities' we show how, via architectural and data definitions and other approaches, we will drive through change in the arrangements for interoperability between systems in schools, and between schools and other agencies (eg LEAs and the DfES).

6.22 The overarching framework within which technical changes will be developed is the Becta Conceptual Architecture developed in 2004 and which was the subject of significant consultation within the educational and ICT supplier community.

6.23 That Conceptual Architecture defined Data Services, Learning Services, Connectivity Services and School Infrastructure Services, with an associated set of procurement principles. Development of the Becta Conceptual Architecture was set in the context of a technical design authority which would have overall responsibility for guaranteeing interoperability and with defining and ensuring adherence to the necessary technical standards.

Interoperability Strategy

6.24 School MIS services have an impact on all layers of the Conceptual Architecture, and thus the development of appropriate technical standards in this area is crucial not just in improving value for money in relation to MIS provision, but for the entire concept of our architectural model. We have therefore set out in some detail the work Becta is progressing in this area. Our intention is to urgently publish more detailed technical recommendations for consideration by the wider educational community and the supply side.

6.25 As a first step we have reviewed the advantages or otherwise of building our interoperability requirement on the existing propriety system proposed by the dominant supplier.

6.26 Under the existing propriety system proposed by the dominant supplier, providers of non-CES MIS systems pay a per system area, per year, per school, charge to access school data via the CES Business Objects interface. Although heavily promoted by the dominant supplier as the way forward on interoperability, we consider that this approach runs the very considerable risk of leading to further supplier lock-in in both the MIS and the VLE/MLE areas.

6.27 Additionally, the greater the extent to which schools decide to use alternative products to those of the dominant supplier (at any level of the Conceptual Architecture), the greater the range and multiplicity of annual charges schools (or their alternative supplier) must pay to the dominant supplier to facilitate access to the schools' own data. Such an approach is therefore not recommended as the way forward.

6.28 Our clear view is that the way forward is a supplier-independent interoperability architecture, based on open standards and on the development of a national core schema developed from existing data sets such as the Common Basic Data Set and Common Transfer File. Our recommendations confirm we intend to urgently embed this approach via the Becta Interoperability Architecture, adoption of which, over an agreed timescale, will be a key requirement for all suppliers wishing to become accredited under our proposed MIS Accreditation Scheme. Our scheme will show not only which suppliers are accredited, but, on an ongoing basis, the extent to which they embrace the requirements.

6.29 Those requirements will include:

- multi-tiered data hubs based on meeting the data needs of systems both internal and external to the school
- frequent and automated exchange of data between systems and hubs
- data models based on the widely understood existing formats (such as the CTF, CBDS data sets)

- authentication and security layers to ensure only authorised data exchanges occur
- links to the Shibboleth authentication environment.

6.30 Our proposed Becta Interoperability Architecture will allow for effective interoperability at the school level, such that a school or LEA can determine that particular functional elements of the school MIS solution could be sourced from different suppliers, provided they all subscribe to the interoperability architecture.

6.31 Our approach will also facilitate interoperability between school and LEA - or indeed DfES-based systems. This will imply the provision of interoperability hubs at the LEA or indeed RBC level, which will facilitate the aggregation of data sets for significant numbers of schools. Crucially, these LEA or RBC interoperability hubs could form a key component of a virtual Data Services layer as defined in our Conceptual Architecture. Key data requests could therefore be met automatically from the data held at the hub, as opposed to making requests of individual schools, as envisaged in our architecture.

6.32 Our contractual framework for approved MIS providers will have a specific category of suppliers (Category 3) that will be capable of providing interoperability hubs and services for LEAs or RBCs that do not wish to provide this service in-house.

6.33 At its core, our approach relies on developing a UK version of the widely used School Interoperability Framework (SIF), customised to meet local needs and building on the significant work already done in relation to data standards via the DfES Information Management Strategy. It is therefore a 'best of breed' approach.

6.34 Subject to further consultation with the wider MIS industry, this approach will be incorporated into the contractual structure for our approved MIS providers.

Deployment Models

6.35 A key issue for consideration in moving forward is the nature of the underlying technical architecture supporting school MIS systems and the extent to which, taking account of emerging technical deployment models elsewhere and increased policy focus on the totality of the services delivered to the young person, the approach whereby systems are hosted in individual schools remains appropriate.

6.36 Our contractual framework makes provision for schools and LEAs to move to other architectural environments if they consider it advantageous.

The Support Opportunities

6.37 A key element of our strategy for achieving greater value for money in relation to the use of school MIS systems is to help drive through change in the manner in which such systems are supported and the way in which they are perceived in many schools.

6.38 We set out earlier in this report our view that school MIS systems are key enablers of effectiveness and efficiency because they provide front-line managers with crucial tools to better understand how they are deploying the considerable financial and human resources delegated to them.

6.39 We also confirmed that if institutional improvement and the self-improving school are to have real meaning, they must be underpinned by MIS systems that are capable of helping school leaders understand the performance of their institution. MIS systems must also facilitate an improved focus on the performance of individual learners and allow teachers, school leaders, administrators, pupils and their parents better access to the information that they hold. In addition to that they are, of course, the day-to-day tool used by many in schools to reduce administrative burdens.

6.40　It is crucial, therefore, to raise the profile of MIS systems, and consequently the value and gains that schools can achieve from effective use of their MIS systems. The existing programmes for strategic leadership of ICT in schools (eg Strategic Leadership of ICT-SLICT) provide one such opportunity to progress such an agenda. However, it will require an increase in self-review and case study resources within that programme to help schools identify gains and pilot improvement.

6.41　There are, of course, a wide range of different models that LEAs adopt to provide support for MIS systems. In a number of cases, support is partially linked (but not embedded) with the LEA's approach to school improvement. In others, the two are not connected. Support from Becta needs to be enhanced to guide LEAs to models that demonstrate efficiency, economies of scale and co-working within and outside the LEA.

6.42　Of course, not all schools adopt the MIS products commended by their LEA, with a number of direct contracts between individual schools and MIS suppliers in place. In many such cases, support is provided directly by the supplier. Subject to quality frameworks and to the improvements in the overall competitive environment, we have also recommended that schools should, as indicated previously, be guided to purchase products and support through arrangements established via their LEA, in all but the most exceptional circumstances.

6.43　To improve the overall effectiveness of support, we see a need for a quality framework that reflects:

- better quality software requiring less support effort to be absorbed by LEA support teams in dealing with the implications of 'buggy' software
- more timely delivery of software updates to allow the most effective use to be made of scarce support staff resources
- reductions in the support effort necessary to upgrade systems
- less reliance on LEA MIS support teams to quality-assure software, other than as part of a contractual agreement so to do
- enhanced support for LEA MIS teams, with Becta taking a lead in developments designed to ensure that LEAs are able to effectively support the potential of MIS systems as tools for school improvement
- the development of programmes and support material to allow school leaders to make the most effective use of their MIS systems
- opportunities for LEA teams to work collaboratively, sharing expertise and resources whenever necessary and, where appropriate, for smaller teams to merge forming larger support organisations.

6.44　Finally, we believe that where an LEA facilitates greater choice for schools in the provision of their MIS systems, or indeed it facilitates different solutions in the primary and secondary sectors, then there is a likelihood that greater costs will result initially in the short term. The Department should consider whether, in the short term, as part of its Strategic Technologies initiative, financial support for such initiatives should be available. In the absence of such support, we consider few LEAs will be able to expand the choices available to schools.

7.1   The final section of our report addresses the area of statutory returns. This area has been one of the most frequently referenced by both supplier and LEA respondents as we seek to address issues in relation to value for money and school MIS systems.

7.2   While there are many areas of concern in relation to statutory returns, respondents recognised that this is a complex area which has expanded very significantly in the last five years and has had to cope with many changes.

7.3   In essence, a key change was the move from a broadly summary-paper-based return (Form 7) to electronic returns at the individual record level. A key advantage of this move was the increasing focus it put on the need for data in school MIS systems to be up to date and accurate.

7.4   Additionally, many view as beneficial the more detailed specification of data requirements which has accompanied that process, and argue that it has significantly facilitated data transfer between competing MIS systems.

7.5   However, just as schools moved from first generation returns based on paper and summary data to second generation returns based on individual data delivered electronically, so the case is now that schools, suppliers and the DfES will need to move to third generation solutions in relation to meeting the needs of policy makers for data from the 'front line' and of the implications of policy in relation to children's services and access to online information for pupils and their parents.

7.6   The key concerns associated with the current arrangements flow from:
- the scale of the data now being requested, which can encompass:
    - Pupil Level Annual School Census (PLASC)
    - school census:
        pupil
        workforce
        establishment
    - key stage returns
    - foundation stage profiles
    - consistent financial reporting
    - attendance data
    - Common Transfer File
    - admissions transfer file
- the frequency with which statutory returns of one kind or another need to be made
- the timescales associated with the definition of specifications, their format and content, and the level of detail and technical robustness necessary for suppliers to be able to develop cost-effective and reliable solutions
- the range of players in the DfES and elsewhere involved in specifying statutory returns
- the length of time necessary to develop test, deploy and support changes at LEA level
- the significant strain which statutory returns place on supplier development resources, such that they now swamp the ability of suppliers to meet functionality enhancements requested by schools

- the fact that there is no contractual relationship between those specifying the data needs (the DfES) and suppliers developing solutions to meet those requirements
- the fact that there is no competitive test to determine whether the costs of developing statutory returns by any of the providers are reasonable
- the unsatisfactory nature of the payment position whereby individual schools, which are not a party to the specification of needs, are facing an ever-increasing cost to meet the information needs of others.

7.7 While the above position may have been justifiable in the early stages of the statutory returns process, we believe it is far from acceptable now. The need is, as we outlined above, for third generation solutions to recognise the need for:

- increasing amounts of data to be available to a wider range of information systems
- 'always correct', 'always synchronised' data as opposed to 'correct once a year' data requirements
- a migration from batch-based data transfer between systems to interoperable systems
- systems that can ensure that when learners or their parents go online to get a picture of progress, they get a picture correct as of that moment, rather than as was some six months ago, or indeed six days ago – otherwise the system falls quickly into disrepute.

7.8 We have proposed a phased change to the way statutory returns are addressed, which, taken as a whole, will deliver the step change necessary to improve these arrangements. We propose:

- An MOU is needed between the DfES and software suppliers in relation to the totality of the roles and responsibilities of each in relation to the delivery of the statutory returns process. We believe this MOU should be in place by September 2005. The timescales agreed in this MOU should recognise the considerable practical challenges associated with the steps currently necessary to upgrade school systems. We therefore believe that appropriate representation from LEAs should be involved in establishing that MOU.
- Once established, that MOU should be enhanced to provide a comprehensive framework for the technical specification of these returns that takes full account of emerging work within Government generally and within the e-Government Unit, and of Becta's work on MIS interoperability.
- That a comprehensive framework should be a cornerstone in the establishment of an EU-compliant framework against which the DfES and others could contract directly with suppliers for the provision of data from schools. This should be in place by April 2006.
- Piloting is conducted during 2006 of a number of centrally contracted returns, leading by April 2007 to a position where all statutory returns have been paid for by those requesting the data, and that schools have used their delegated resources to pay for system enhancements that **they** require. Where, as is the case with many current returns, the data return is relatively straightforward and does not require system re-engineering, there is no particular reason why the data collection could not be market tested against all the Category 3 providers, increasing competitive pressure to improve quality and reduce costs.

1. As part of our work on value for money and school MIS systems we sought to determine the cost of the current arrangements. A high-level costing model was developed, based on responses to our various consultations, to capture costs in three key areas:

   - The costs of MIS support staff
   - The costs of MIS computers in schools
   - The cost of MIS licensing.

2. Our cost model excludes the cost of staff in schools that use the MIS systems. We take the view that these staffing costs are elements of the cost of school administration as opposed to the cost of the MIS systems that support the staff.

MIS Support Staff Costs

3. The staff employed to support the use of MIS systems were usually (but not exclusively) employed by LEAs, with the costs being recovered through charges to schools. In some cases the LEA contracts for the provision of support from a private sector contractor. Examples also exist where support is contracted from the private sector provider by individual schools or groups of schools. As part of our LEA survey we sought to determine the level of resources deployed in the support of school MIS systems. It must be understood that a wide range of support scenarios exist, and we have made a significant number of simplifications as we have sought to understand the order of magnitude of costs involved.

4. Drawing on the returns provided by LEAs we have been able to arrive at a very broad-brush estimate of the number of staff involved in supporting school MIS systems. That estimate assumes one full-time-equivalent (FTE) member of a support team exists for every 20 primary schools and for every 20 special schools, increasing to one FTE for every 10 secondary schools. Table 1 below estimates that, on an order of magnitude basis, the total number of staff deployed in supporting school MIS systems is some 1,286.

Table 1 – Number of Support Staff Deployed in MIS support			
School Type	Number of Schools	Schools per FTE Support Staff	Total Number of Support staff
Primary	17,762	20	888
Secondary	3,409	10	341
Special	1,148	20	57
Totals	**22,319**		**1,286**

5.   Our approach recognises that typical support teams comprise a mix of staff, and that various categories of staff would attract different costs. Again drawing broadly from the data provided by LEAs, we estimate that overall some 40% of staff are technical, some 20% administrative and a further 40% MIS business process support staff. Table 2 summarises our high-level estimate of the number of each category of staff that are therefore deployed in MIS support.

Table 2 – Overall Numbers of Staff by Category			
School Type	Number of Technical staff	Number of Administrative staff	Number of MIS Support staff
Primary	355	178	355
Secondary	136	68	136
Special	23	11	23
Totals	**515**	**257**	**515**

6.   Our final step in determining the MIS support staff costs sought to determine the costs of employment of the technical, administrative and support staff. We addressed this by estimating a typical salary for each category of staff, and recognising that, in addition to salary, a wide range of other costs would be incurred, such as:

   •   employment-related costs (eg employer National Insurance Contribution and pension contribution), which could add some 15–20% to basic costs

   •   accommodation-related costs (ie the provision of office space and any charges for central shared overheads), which could add some 10% to basic costs

   •   travel and subsistence costs which, depending on the nature of the LEA, could be considerable and add a further 25% to salary costs

   •   supplies and services (ie consumables, mobile phones, IT equipment, etc), which we estimate at some 15%

   •   training courses, equipment and facilities, which we estimate at a further 20% of basic salary.

7.   While these factors could add over 90% to basic salary, we have conservatively estimated these uplift factors to add 65% to the salary costs of technical and MIS support staff, and only some 35% to the costs of administrative staff. Table 3 sets out the costs of employment per member of staff.

Table 3 – Salary and Uplift Factors by Staff Category			
Category of Post	Base Salary	Uplift Factor	Cost of Employment
Technical Staff	£25,000	0.65	£41,250
Administrative Staff	£12,500	0.35	£16,875
MIS Support Staff	£35,000	0.65	£57,750

8.   Table 4 combines Tables 2 and 3 to give an overall staffing cost for the provision of MIS support in each sector and across each category of staff. This estimates a total of some £21 million being expended annually in technical support, with just under £30 million on MIS business process support, and just over £4 million on administrative support. Overall, we estimate the MIS support staff costs are some £55 million annually.

Table 4 – Total Cost of Support for each Sector			
Totals	Technical Support £ml	Administrative Support £ml	MIS Support £ml
Cost of Primary Support	14.65	3.00	20.52
Cost of Secondary Support	5.62	1.15	7.87
Cost of Special Support	0.95	0.19	1.33
Totals	**21.23**	**4.34**	**29.72**

The Cost of MIS Computers in Schools

9.　To establish the cost of providing the technical infrastructure necessary to run the various MIS applications necessary, we have drawn on data from the most recent DfES ICT in Schools survey and the relevant Becta Total Cost of Ownership (TCO) study on the cost of ownership of ICT facilities.

10.　The DfES data indicated that on the basis of the 2004 survey there were some 274,000 computers in schools used for administration and management. The breakdown of that DfES-based data is set out in Table 5.

Table 5 – Number of Computers used for Management and Administration in 2004			
Sector	Number of Schools	Number of Systems per School	Total Admin Systems
Primary	17,762	6.0	10.6,572
Secondary	3,409	45.6	155,450
Special	1,148	10.6	12,169
Totals	**22,319**		**274,191**

11.　However, this overall total needs to be treated with a degree of caution. The 2004 DfES survey makes the point that the most recent figures in this category were derived by calculation. In other words the survey subtracted the number of computers used mainly for teaching and learning from the total number of computers in a school, and assumed the difference was those computers used mainly for management and administration.

12.　In previous years, schools had been specifically asked to identify the number of computers used mainly for administration and management. The change in methodology may be a contributing factor underpinning the fact that the number of such systems had risen from some 165,000 in 2003 to 274,000 in 2004.

13.　To identify the total cost of ownership of a computer we used the data contained in the most recent Becta TCO study. That data suggested that for 'non open source schools' the typical per PC costs were in the region of £1,228 per primary school and £1,036 per secondary school. However, these costs focused on the use of curriculum systems and, recognising the fact that many users of MIS systems are relatively more confident with ICT, we have reduced both the elements of those costs dealing with support.

14.　Firstly, we have removed entirely any costs for informal support. Additionally, to take account of the tailored support available from the LEA for MIS systems, we have reduced the cost of the formal support by 75%. The impact of this on the TCO assumptions for MIS systems is set out below in Tables 6 and 7.

Table 6 – TCO Costs for Primary MIS Infrastructure		
Cost Heading	Primary TCO Study £ml	Primary Admin and Management £ml
Hardware	281	281
Software	64	64
Network	67	67
Consumables	53	53
Training	53	53
Formal Support	406	102
Informal Support	304	0
Total	**1,228**	**620**

Table 7 – TCO Unit Costs for Secondary MIS Infrastructure		
Cost Heading	Secondary TCO Study £ml	Secondary Admin and Management £ml
Hardware	222	222
Software	67	67
Network	57	57
Consumables	28	28
Training	12	12
Formal Support	386	96
Informal Support	264	0
Total	**1,036**	**482**

15. Mapping those lower TCO costs onto the number of computers used for administration and management yields Table 8, which indicates that the TCO of the MIS infrastructure in schools could be in the region of £148.5 million annually.

Table 8 – Total Cost of Ownership			
Sector	Becta TCO Cost £ml	Total Administrative Systems	Total TCO Costs £ml
Primary	620	106,572	66.03
Secondary	482	155,450	74.93
Special	620	12,169	7.54
Totals		**274,191**	**148.50**

The Cost of MIS Software

16.   We estimate that such software is currently costing some £30 million annually.

The Total Cost of MIS Provision in Schools

17.   Summarising the costs for MIS support of some £55 million annually with the infrastructure costs of some £148.5 million annually and of licensing in the region of £31 million annually leads to the conclusion that the order of magnitude estimate of the total cost of MIS system software and support is some £235 million annually, as set out in Table 9.

Table 9 – Total Cost of MIS Provision in Schools				
Sector	Support £ml	MIS Infrastructure £ml	MIS Software £ml	Total per Sector £ml
Primary	38.2	66.0	14.0	118.2
Secondary	14.7	74.9	16.0	105.6
Special	2.5	7.5	1.0	11.0
Totals	**55.3**	**148.5**	**31.0**	**234.8**

18.   However, these are very broad-brush estimates, and significant caution is therefore necessary. We have consequently applied some sensitivity analysis to our costing based on the following assumptions:

- that we have overestimated the cost of MIS support by 20%
- that, for the reason previously indicated, the number of computers used only for administration and management in schools has been overstated in the 2004 survey by 25%
- that our estimate of the cost of licensing of MIS software is overstated by 15%.

19.   Table 10 sets out the impact of each of these assumptions on our overall costs, and indicates that if all of the reductions were to apply, the total cost of MIS systems annually would be reduced to £182 million. We use this lower figure in our report, although we recognise that in reality the costs could be higher.

Table 10 – Impact of Sensitivity Analysis		
Sensitivity	Impact %	Financial Impact £ml
Base Case Costing		234.8
Reduce Cost of Support	-20%	-11.1
Reduce Number of MS Computers	-25%	-37.1
Reduce MS Software Costs	-15%	-4.65
Revised Total Cost of MS provision in Schools		**182.0**

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