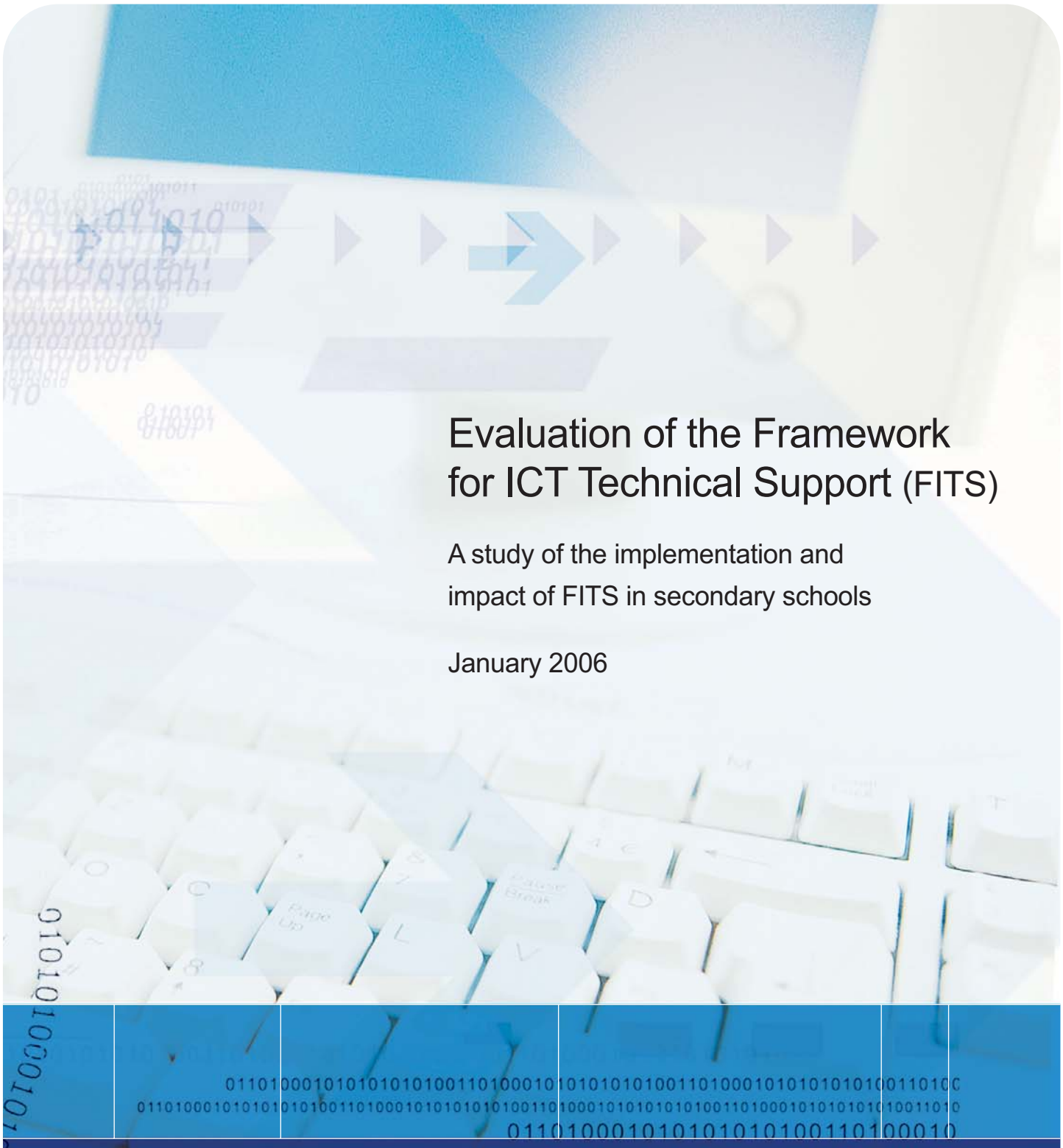

Evaluation of the Framework for ICT Technical Support (FITS)

A study of the implementation and impact of FITS in secondary schools

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Becta
ICT Research

Contents

Executive summary

This report presents an evaluation of the Framework for ICT Technical Support (FITS) in secondary schools as undertaken on behalf of Becta by HH Education Services Ltd (HHES). The objectives of this evaluation were to understand how FITS is being adopted and adapted in schools, and how implementing these guidelines has impacted on ICT support and user satisfaction.

Who participated?

A total of 16 schools participated in this evaluation, of which 11 have made excellent or good progress in implementing FITS. Four schools have made slower progress – due to conflicting priorities or a lack of technical staff resources – but remain committed to the process.

What are the key factors in implementing FITS successfully?

Strong and committed senior management support is vital to implementing FITS successfully. The findings showed that schools which obtain most benefit from FITS have a representative on the school senior leadership team who is strongly supportive of the guidelines and proactive in their implementation. Implementing the FITS guidelines requires an initial investment of time and effort in order to be successful but most schools are prepared to do this in order to deliver longer-term improvements.

How will FITS affect learning and teaching?

The most successful schools believed that it is already encouraging greater use of technology in teaching and learning and will continue to do so since it frees up time to discuss teaching and learning needs; it improves overall communication between teachers and technical support staff, leading to a better understanding of user requirements. Teachers also have more confidence in the reliability of equipment, or that the technicians will resolve any issues quickly if they arise. Ultimately, this will improve school performance and inspection outcomes.

Specific improvements

The impact of FITS in schools produced the following benefits:

- Better accountability of technical support staff and an improved customer service ethos. This was manifest through improved communication and relationships with the leadership team and staff users.
- A shift away from reactive firefighting to a more structured, proactive approach to management of ICT.
- Improved prioritisation of incident management and response through consideration of user requirements and greater focus on service levels.
- Improved implementation of change since the process is more methodical and better planned and communicated.
- A more structured and strategic approach to the integration of ICT into the school planning and budgeting processes.

All of the schools considered FITS to be sensible, pragmatic and useful guidelines for managing ICT technical support. As such, they were readily adopted and valued, particularly by the technical support staff. The scope of the FITS guidance addresses the key areas of ICT management and the content is presented in a way that is relevant to schools.

Implementing FITS encourages a greater use of technology in learning and teaching

Introduction

In December 2002 the Department for Education and Skills (DfES) asked Becta to set up an advisory service to improve the quality of technical support provision in schools. A programme of consultation and development was carried out and the Framework for ICT Technical Support (FITS) was launched on the Becta website in September 2003. FITS is based on the industry best practice standard – IT Infrastructure Library (ITIL) – and is a toolkit of advice, checklists and downloads relevant for schools of any size or ICT proficiency. For more information on FITS, see http://www.becta.org.uk/fits.

This report presents an evaluation of FITS in secondary schools. The objectives are to provide Becta with an understanding of:

- how FITS is being adapted and adopted in schools
- how implementing FITS affects technical support provision
- how implementing FITS affects user satisfaction
- how implementing FITS affects the overall school management
- the usability of the FITS advisory materials and associated products
- emerging issues arising from the implementation of FITS.

This evaluation was commissioned by Becta in October 2004 and was undertaken by HH Education Services Ltd (HHES) between November 2004 and November 2005. The scope of the assessment is set out in Becta's Invitation to Tender (ITT) for the Evaluation of FITS (dated 29 September 2004 and reissued 11 October 2004).

The local authorities in Bolton and Sheffield were invited by Becta to take part in the FITS evaluation. They contacted secondary schools in their areas and recruited 16 with differing levels of technical support to be part of the evaluation. The methodology for evaluating the implementation of FITS assessed the progress made in these schools over the course of a year. To provide baseline information against which progress could be measured, ICT service management in each school was scored using a formal checklist addressing each FITS process. Initial visits were made to each school between November and December 2004. During this visit, the checklist was reviewed, interviews were held with ICT technicians, representatives of the school leadership team and staff network users, and background information was gathered.

The schools were revisited twice over the course of the following year to determine what progress they had made, understand the challenges they had encountered and identify the solutions they had adopted. Follow-up visits were undertaken between February and March 2005, and a final visit made in October 2005. On each visit, the checklist was rescored and further interviews held with technicians and members of the school leadership team. Staff network users' views on service were obtained using an anonymous online questionnaire. Please refer to Appendix A for a detailed methodology of the evaluation.

We would like to extend our thanks to the following schools, local authorities and organisations for participating in this project:

Birley Community College, Sheffield
Bradfield School, Sheffield
Hayward School, Bolton
High Storrs School, Sheffield
King Edward VII School, Sheffield
Ladybridge High School, Bolton
Myers Grove School, Sheffield
North West City Learning Centre, Sheffield
Rivington & Blackrod High School, Bolton
Smithills School, Bolton
Schools ICT Unit, Bolton LEA
St James's CE Secondary School, Bolton
Tapton School, Sheffield
Thornleigh Salesian College, Bolton
Turton High School, Bolton
Westhoughton High School, Bolton
Wisewood School, Sheffield
Withins School, Bolton

Key findings

School summary reports

This section summarises progress made by the 16 participating schools in implementing FITS. The progress made was categorised as excellent, good or slow.

EXCELLENT

- Seven schools have made excellent progress in implementing FITS and have successfully introduced many of the processes.

GOOD

- Five schools have made good progress and have implemented or begun to implement the majority of the processes:
  - Three schools have made good progress throughout the year and have successfully introduced some of the processes in their entirety and others in part.
  - Two schools made good progress initially but have recently stalled. Both of these began the process of reviewing and implementing various FITS processes but had to change focus in terms of priorities over the course of the year. In one of these schools this was due to ongoing problems associated with network upgrades over the summer period; in the other the delay was due to changing technical support staff and network problems.

SLOW

- Four schools have made very slow progress or struggled to implement FITS. A variety of reasons were cited for a lack of progress:
  - Delayed roll-out – one school is slowly making progress with implementing FITS and roll-out of the FITS Service Desk process is due to go live shortly.
  - Staffing – two schools had limited progress in implementing FITS over the period of this evaluation due to a lack of technical staff. However, these schools both recognise the value of FITS and intend to introduce the guidelines as soon as sufficient time and resources are available.
  - Special measures – one school is currently in special measures and senior management did not consider the implementation of FITS as an immediate priority. The project consequently lacked sponsorship and support.

Three quarters of the schools have made good or excellent progress with their FITS implementation

Table 1 summarises the progress made in each of the schools.

Table 1. Schools making excellent progress	
School	**Comments**
School B	The school has made excellent progress in implementing FITS and is seeing benefits in service delivery. The installation of incident logging software for the Service Desk has assisted this. The school has customised FITS documents to suit local needs. FITS has brought about a greater degree of strategic planning and an appreciation of the need for the technical support team to be more "visible" to teaching staff. The technical support team has now embedded the FITS approach into its everyday work. FITS has allowed the network manager to plan strategically and become more available for teaching staff, who also feel more comfortable about asking for help.
School J	The school has implemented significant parts of the FITS guidance with most focus being placed on establishing a Service Desk to provide staff with a single point of contact and a mechanism by which the activities of the ICT support function may be co-ordinated. Particular progress has also been made in the areas of Incident Management and Change Management, specifically responding to fault calls and managing change. These are now being prioritised and managed according to pre-agreed targets depending on the severity of the incident. Users have remarked that the quality of ICT support and service has improved over the past year as a result of implementing FITS. The ICT support team is now operating proactively rather than reactively, and network and equipment reliability has also improved.
School G	The school has implemented nearly all aspects of the FITS guidelines. The focus for much of this activity is the Service Desk, which is already acting as a single point of contact for all users. The school has yet to develop any formal Service Level Management, but intends using Service Desk reports to create a meaningful agreement. User perception of the technical support service was already high, but has improved further as result of implementing FITS. The technical support team now has a far greater role in strategic development of the network to support teaching and learning.
School A	The school has made significant progress in implementing many parts of FITS, focusing particularly on the areas of Service Desk and Incident Management. The network manager is currently implementing more rigorous Change Management and Release Management processes and the Financial Management process is also being improved. Service delivery at the school is perceived to be better as result of these processes and communications and relationships with users have improved.
School C	When the school's technicians looked at FITS at the beginning of the project, they realised that they had no processes at all and had to start from scratch. Initially, progress was slow since getting processes approved by the senior management team took time. Over the course of this study huge progress has been made and they now have the following FITS processes: Service Desk, Incident Mangement, Change Management, Problem Management, Network Monitoring and Financial Management.

	In the next stage of development, the technical support team is going to introduce Service Level Management processes so staff expectations are managed and achievable rather than based on previous experiences.
School D	When the school installed an entirely new network, it used it as an opportunity to introduce the FITS processes. Significant progress has been made. The school has since seen improvements in all areas that FITS addresses, especially in the prioritising of Incident Management and Problem Management. This has led to a substantial improvement in ICT service delivery.
School F	The school had already started to implement ITIL (the processes on which FITS is based) before this evaluation started. Therefore, most progress has been in those areas which had not already been introduced. The only processes in which the technical support team has not made significant progress are Change Management and Service Level Management; all other processes have now been fully implemented to at least a rudimentary level. In addition, the team is hoping to begin its own review of each of the FITS processes shortly.
Table 1. Schools making good progress	
School P	The school has worked hard to introduce many elements of the FITS guidance and believes it to be an excellent framework for the organisation of the technical support function. The school has used FITS to introduce an embryonic Service Desk, a database for logging fault calls and change requests, an acceptable use policy and a software purchasing policy. Unfortunately, ongoing problems with the network infrastructure have prevented further progress with implementing FITS since the summer of 2005.
School N	The school made little progress with implementing FITS in the early part of the year since the priority was installing a backlog of software applications. Once the backlog was addressed, a change in line management for the technical support function has led to significant progress. A Service Desk has been implemented with a single point of contact. Change Management, Incident Management, Problem Management and Configuration Management processes have been implemented and progress has been made in the areas of Release Management, Service Continuity Management and Financial Management. These have enabled the technicians to adopt a more structured and proactive approach to supporting the network. The network manager is now able to adopt a more measured and strategic approach to his role and service delivery is improving as a result.
School H	A Service Desk was already in place at the start of the FITS evaluation, but the process has been improved, with clearly defined processes being drawn up and conveyed to staff. The single biggest change, however, has been the full implementation of a Change Management process. In the next phase of development, the technical support team intends to introduce regular network testing. It also intends to introduce graphs and reports to improve ICT visibility for the senior management team.
School O	The school was already in the process of reviewing its technical support processes prior to embarking on the evaluation of FITS, and reviewed many of its intended processes in light of this. Over the past 12 months, the school has implemented a formal Service Desk and introduced formal processes for documenting Incident Management, Problem Management, Change Management, Release Management and Service Continuity Management.

	These have been rolled out to both technical support and teaching staff, and a programme of culture change is being implemented to encourage staff to use the new processes. Management of the ICT function is improving, although more progress needs to be made to win the hearts and minds of users.
School M	The school has implemented extensive parts of the FITS guidance including the development and publication of a technical support charter based around the FITS format but tailored to meet the school's specific requirements. A central Service Desk was established which improved both service delivery and communication with users, but this was later abandoned due to constraints on resourcing. No quantitative data was obtained on specific improvements directly attributable to FITS although ICT service delivery as a whole is reported to have improved. Unfortunately, the network manager who was responsible for championing the FITS implementation went on maternity leave in the spring of 2005 and has been replaced by a temporary contractor. A combination of this issue and network reliability issues following a summer 2005 upgrade means progress on FITS has been stalled.
Table 1. Schools making slow progress	
School E	The network manager made good progress in implementing FITS during late 2004 and early 2005. This included formal processes for fault reporting, improved audit processes, Service Continuity Management and contingency planning. Unfortunately, the school lost its technician in the spring of 2005 and this post is still currently vacant. Due to limited staff resources, the school has been unable to make any further progress with implementing FITS since the early part of the year.
School L	The school has been unable to make any significant progress in implementing FITS within the timeframe of this project due to a shortage of technicians. Although the school has begun to implement a Service Desk, it has not yet been made available to staff. Despite the school having a relatively good PC:technician ratio, the demand on technicians' time is heavy for the following reasons: • The school has a lot of laptops and much time is expended in delivering these to classes, setting them up and collecting them after the lesson has finished • One technician spends one day each week supporting a local partner primary school • The current arrangement for sharing technical support between the ICT co-ordinator and the technical support team is not an efficient way of managing the workload, which distorts the level of technical staff resource available to the school. Until these issues are addressed, it is unlikely that the school will be able to make much headway in implementing the FITS processes.
School K	The school has made some progress in setting up and preparing for a formal Service Desk. Inventory data and documentation has been collated and input into a database. Consideration has been given to the processes supporting the operation of the Service Desk and the impact these will have on users. Although these are yet to be rolled out, they are planned to go live imminently (post half term) and are seen as the first step towards a full implementation of a Service Desk.

	The school has also considered the Financial Management aspects of FITS and this has enabled a successful case to be made to the governors for funding for the ongoing replacement of ICT equipment – something not previously achieved.
School I	The school has been unable to make any progress in implementing FITS as it has been preoccupied with coming out of special measures over the duration of this project. This situation, combined with a change in the management of the ICT function and a shortage of technical resources, has meant that no focus or priority could be given to implementing new processes.

Implementing FITS

Approach

Schools typically approached the implementation of FITS in a pragmatic fashion: they have followed the overarching principles and concept of the guidance while adapting it to suit their circumstances and taking into account their own resources and priorities. This has encouraged technical staff to adopt the processes since they feel greater ownership and "buy-in".

Most schools have followed FITS guidance and found a starting point which gives priority to processes which suits the needs of both the network manager and the leadership team member responsible for the management of technical support staff. To do this, the schools used the assessment completed in the FITS Expert Workshops. This identified strengths and weaknesses, and ultimately which FITS processes they should implement first.

It is evident that the initial focus in most schools has been around implementing improved reactive and change processes – usually Service Desk and Incident Management. This is to be expected given that these are the most visible from the users' perspective in terms of perceived quality of service delivery by ICT technical support. Once the schools have established these processes, they then move on to the strategic and proactive processes – such as Availability and Capacity Management and Service Continuity Management – which are less visible to the user but improve overall ICT service delivery.

All schools stated that they wanted to document formal Service Level Management processes; it was evident that school senior management were keen to promote improved communication and relations between users and technical support staff and ensure user expectations were set correctly with regard to ICT technical support. Despite this, no schools have published a service level agreement although several schools have documented user charters or service catalogues. The main reason given for this was the belief that further analysis of Service Desk data would ensure that any service levels published could be delivered. Table 2 shows which processes have been considered or implemented by each of the participating schools.

Table 2. School FITS specific processes	Service Desk	Incident Management	Problem Management	Change Management	Release Management	Configuration Management	Network Monitoring	Preventative Maintenance	Service Level Management	Service Continuity Management	Financial Management
School F	●●	●●	●●	●●	●●	●●	●●	●●	●	●●	●●
School B	●●	●●	●●	●●	●●	●●	●●	●●	○	●●	●●
School J	●●	●●	●●	●●	●●	●●	●	●●	●	●	●●
School G	●●	●●	●●	●●	●●	●●	●●	●●	○	●●	●●
School A	●●	●	●●	●●	●●	●●	●	●●	○	●	●●
School C	●●	●●	●●	●	●●	●●	●●	●	○	○	●●
School D	●	●●	○	●	●	●●	●	●●	○	●	●●
School P	●	●	○	●	○	●	●	○	○	●	○
School N	●●	●●	●●	●	●	●	○	○	-	○	●
School H	●●	●	●	●	●	○	●	●	○	●	●
School O	●●	●●	●●	●	●	●	●	○	○	○	●●
School M	●	●	●	○	○	○	○	○	●	●	●
School E	●	●	○	●	●	●	○	●	○	●	●●
School L	○	○	○	-	-	-	-	-	-	-	-
School K	●	○	○	○	○	○	○	○	○	○	●●
School I	-	-	-	-	-	-	-	-	-	-	-

●● Have implemented significant parts of the process ● Implemented in part
○ Under consideration

Schools started their FITS implementation with the Service Desk as it is the most visible process to users in terms of perceived quality of service delivery

FITS processes

Service Desk

Establishing a Service Desk was the main focus area for all of the schools since this was perceived as making the most visible difference to users.

Types of Service Desk varied significantly from school to school with some developing simple in-house systems based around spreadsheets or databases, and others implementing sophisticated third-party software from commercial providers. However, nearly all schools downloaded the Service Desk forms from the Becta website, and used these as the basis for Service Desk operations. Most schools then adapted and customised these forms for meet their own specific needs.

Most of the schools have attempted to introduce a focal point for the Service Desk – although some schools claimed they were unable to resource a permanently staffed Service Desk or single point of contact (SPOC). Most schools considered themselves to be significantly under-resourced – with most technicians already stretched – and they could not dedicate someone full-time to this role. Despite feeling they lacked the resources to follow precise FITS guidance, the schools embraced the concept and implemented solutions which addressed the spirit of the guidance. Those schools that did introduce a permanently staffed SPOC – either by employing a full-time person or implementing a rota system among existing technicians – have identified an improvement in service levels and communication with users as a result.

At present, the data is typically used to track requests for help and monitor performance of ICT service delivery. Few schools have as yet begun to analyse the data being collected by the Service Desks to proactively manage the system and identify problems, although all intend to do so when sufficient data has been accumulated to make trend identification and scenario analysis possible.

The following table sets out some of the challenges and issues that schools encountered in implementing Service Desk processes and the solutions that they developed to address these:

Challenges and issues	Solutions
Creating a single point of contact: • Technicians too busy • Too expensive • ICT support has only small number of staff.	Schools adopted a number of creative solutions to address this issue. These included: • making the first line part of the role of administrative staff other than ICT technicians. Organisational capability and a customer service attitude are equally (if not more) important attributes for this role as much as technical capability. • routing calls through to an answerphone or voicemail system which is frequently checked and responded to • implementing software which automatically creates call numbers and emails network users an acknowledgement. Many of these systems also allow users to track progress of the call (assuming that the ICT technicians keep these updated).
Commercial software is too expensive or not within budget.	The Service Desk can be effectively implemented using in-house tools such as standard spreadsheet or database software – several schools have done this very successfully. One school used the functionality of the email calendar software to

	create task lists, which although not ideally suited to the purpose were a quick, simple and zero-cost approach to get them up and running. Other schools identified "freeware" Service Desk software on the internet and adapted this to meet their own specific needs.
Commercial software is perceived as not meeting school needs or being "FITS-compliant".	Request the software supplier to upgrade the software such that it addresses all aspects of FITS. One school approached a potential supplier which confirmed it was willing to do this, on the assumption that doing so would give it a competitive advantage over its rivals.

A permanently staffed Service Desk improves service levels and communication with users

Incident Management

Incident Management was the second area of focus for schools. Many had in place some type of form-based system for reporting faults or requesting help but often this did not work well. In this area schools are trying to encourage staff to follow more rigorous guidelines through support and endorsement of the leadership team.

Technical support staff universally welcomed the concept of a formal incident management process, although some schools were struggling to get staff users to follow it. A repeating theme was that many network users initially considered detailed forms to be bureaucratic, an additional administrative burden and something they did not have time to do. Time is needed for users to move away from the culture of stopping technicians in the corridor and many of the schools have made good progress in achieving this change. Those that have successfully achieved this change have benefited from a structured approach to the delivery of ICT support and better data from which to identify trends and proactively manage the technical support function.

Challenges and issues	Solutions
"Corridor culture" – staff users stopping technicians in the corridor rather than using the Service Desk.	Formal, public support of the headteacher (or other member of the leadership team) is invaluable in encouraging staff to follow new processes. Those schools that did this most successfully put a lot of thought and effort into a publicity campaign to roll out the new processes, and provide feedback to users on progress made and service delivered. These included: • a formal "launch" of the Service Desk by the headteacher and network manager • regular re-enforcement of the importance and benefits of following the processes at staff meetings • producing posters, coasters and mugs advertising the new process and distributing these around the school in staff rooms, classrooms and corridors • putting the Service Desk process and contact information on the school intranet • providing staff with shortcuts to the Service Desk software on the intranet/website • putting "request for help" forms in each classroom and staff room • incorporating this information into staff induction packs and service catalogues.

Staff users felt they didn't have the technical knowledge to complete the "request for help" forms.	Several schools simplified forms downloaded from the FITS website to make them more straightforward to complete. In some instances, the forms were amended such that the technical data and solution was on the reverse of the form to be completed by the technicians. This was then input into the incident database at a later stage.
Staff users claim not to have time – or simply will not contact – the Service Desk.	Several schools operate a range of methods for requesting help or reporting incidents in order to make it as simple and convenient for users as possible. Methods included: • paper-based forms – completed by the user • web-based forms – completed by the user • telephone – with data input directly into the Service Desk software by the technician/Service Desk representative. However, all schools are trying to move away from allowing staff users (no matter how senior!) to stop technicians in the corridor and request support. This needs the support of school leadership teams to explain the benefits of introducing the new processes – and that the technicians are not being unhelpful!
Technicians consider that it takes longer to write things down than to solve them.	Several schools configured the Service Desk software such that it was mandatory to complete the "actions completed" field before a call could be closed. In this way, technicians had to document this to ensure the open calls list remained accurate. Successful schools then managed this process closely by making "calls closed" a key performance indicator and linking this to performance management analysis.

Problem Management

The majority of the schools participating in this programme have begun to implement Problem Management processes and the majority refer to knowledge bases to assist in resolving problems. A few have also started to utilise the information collected from the Service Desk to identify troublesome hardware and software and deal with network problems.

Schools with larger ICT technical support teams are generally better organised and more proactive in their approach than schools with only one or two technicians. This is to be expected since there is greater role demarcation within these teams, and it is necessary to ensure effective communication across the teams. Despite this, implementation of Problem Management processes in the majority of schools is still at a fairly rudimentary level and most schools have not yet developed a formal schedule for analysing problems or keep detailed records of the activities performed at each stage of resolution.

It is ironic that two of the schools that were suffering from ongoing network problems following summer upgrades had not applied the FITS Problem Management process, and claimed not to have time to implement FITS. This is disappointing since it suggests that these technicians have not fully grasped that FITS underpins day-to-day activities and would help them solve their problems, rather than being an additional burden. It is possible that had they followed the FITS processes, properly planned the upgrades and fully identified the risks beforehand, then they may not have encountered these problems at all or at least would been able resolve them more quickly.

Challenges and issues	Solutions
No time to implement Problem Management – too busy fixing problems.	The schools which successfully implemented Problem Management are structured and methodical in their approach to this process. Network managers and technicians met on a regular basis with senior managers to analyse data, agree the issues and develop action plans to address them These schools are also disciplined in their approach to problem-solving and apply a problem analysis tool (such as root cause analysis and fishbone diagrams).
A perception that there is not enough data available to analyse trends. (This was cited as a reason for not analysing information and data in the early days of implementing FITS.)	Schools which were disciplined in inputting all fault logs and solutions through the Service Desk into an incident database quickly amassed enough information to identify key problems. An example of this was a problem one school was experiencing with a particular model of printer which jammed with far greater frequency than any of the other models used. This was identified within six weeks of introducing the Service Desk. The preferred printer manufacturer has now been changed and fault calls for this have reduced as a result.

Problem Management helps to identify trends and reduce the number of support calls as a result

Change Management

Most schools have implemented Change Management forms based on the FITS templates and use the Service Desk to capture requests for change. In the schools where these have been embedded, there is more consideration about the value of changes to teaching and learning through discussion with senior management.

Most technicians recognised that they had more work to do in fully assessing the impact and risk of changes, particularly with regard to discussing and communicating the impact on users. Some schools which encouraged users to identify specific needs and requirements from change processes found users unwilling to spend time explaining issues, or that they simply did not understand the technical complexity of their requests (software configuration options, for example).

No evidence was identified of technical teams reporting on the volume and frequency of changes to senior management.

Challenges and issues	Solutions
Technical support staff not having enough time to implement Change Management processes because “we are too busy!”	Those schools which have successfully implemented Change Management consciously made time for these processes. They have found that changes following this process are better planned, less likely to encounter unforeseen problems, and meet ICT users’ requirements more fully.
School senior management are reluctant to become involved in Change Management because they considered it too technical.	This was overcome by ensuring Change Management included consideration of financial implications, and the benefits/impact of the changes on learning and teaching.
Users reluctant to spend the time providing detailed requirements on software and hardware configuration.	Schools found that time, patience and strong customer service skills are the best way to address this issue. Once users have been through the Change Management process with the technical staff, they recognise that it is to their benefit and that they will get a faster and more effective change as a result.

Release Management

Release Management has been implemented to a similar stage as Change Management since most schools have undertaken these processes in parallel. Many schools have followed the FITS guidance and developed build processes and checklists, although the quality of these varies. Those schools which have implemented it successfully found roll-out of new equipment to be more straightforward as a result.

Acceptance testing and sign-off also varied significantly from school to school – one school had introduced the relevant forms but struggled to persuade technicians to adopt the new process.

As with Change Management, the technical teams recognise that user consultation is required to understand users' needs and training requirements prior to developing build specifications. This is still weak in most of the participating schools.

Challenges and issues	Solutions
Network manager struggles to get technicians to follow the process.	No easy solution to this was identified apart from perseverance by the line manager. Eventually, technicians recognised that their job was made easier by following the process since roll-out of new equipment was faster and simpler.

The roll-out of new ICT equipment is more straightforward with Release Management

Configuration Management

Most of the schools have asset inventories although these vary widely in quality and accuracy. Since participating in the FITS programme, most schools have updated these inventories although are not yet using them to plan changes and diagnose incidents.

Challenges and issues	Solutions
Time taken to conduct an accurate inventory.	Schools adopted various approaches and solutions to this: • Scheduling in the inventory over holiday periods when demand from users was lower. Most documented/updated the inventory in the summer break – usually as part of a network upgrade project. • Documenting one room/area per day/week and making this the first task in the morning/the last task at night. • Allocating this as a specific project to a designated technician and reducing their workload accordingly until it was completed. • Implementing tools that automatically generate configuration management databases. These are available at little or no cost under existing school software licensing agreements.
Maintaining an up-to-date inventory following equipment moves or changes.	Software tools were the best solution to this since technicians frequently overlooked updating the inventory for minor equipment, such as printers.

Availability and Capacity Management

1) Preventative Maintenance

All schools have regularly updated firewalls and antivirus software in place and are professional in following these processes. Few schools have a regular, planned inspection and maintenance schedule and are still operating reactively. Schools with larger technical support teams have begun to implement these processes and the focus of operations has begun to shift from reactive to proactive.

All schools carry out back-ups regularly although many still do not have a documented procedure for this and the majority do not test the integrity of the back-up tapes. Several network mangers said that they keep back-up tapes at home as the off-site storage location. It was felt that this solution was better than keeping the back-up tapes on-site, but is not ideal as it may be subject to allegations of misuse and or abuse under the Data Protection Act.

Most schools had not undertaken any formal risk analysis up to the start of this report, but several have now done so, based on FITS guidance. Where resources and finances have permitted, several schools have now implemented duplicate or previously redundant equipment as back-up for critical components.

2) Network Monitoring

Many of the schools still do not have up-to-date network schematics or diagrams – a fundamental part of the FITS guidance. Some had software which automatically provided some of this information.

Several of the schools have implemented network monitoring tools since participating in this programme and now regularly monitor network performance and capacity.

None of the schools have checked the integrity of their cabling and have addressed problems reactively through the cabling installer; most schools said their cabling was still under warranty.

Challenges and issues	Solutions
Where can we find off-site storage?	Several schools made a reciprocal arrangement with partner institutions such as feeder primaries, other schools, colleges, local authorities or local businesses to store their back-up tapes.
Network monitoring tools are expensive and complicated to implement.	Several schools have identified excellent network monitoring tools that are available without cost. This information has been shared among those schools that participate in local FITS support and discussion groups.

Preventative Maintenance shifts the focus of operations from reactive to proactive

Service Level Management

Several of the schools have developed service catalogues documenting ICT services available to users, providing information on how to access technical support and clearly setting user expectations. As yet, none of the schools had got to the stage of publishing a formal service level agreement (SLA), although all recognised the benefits of doing so and intended to introduce it at some point in the future. However, this was a process where schools require considerable direction and guidance:

- Several schools that wanted to implement a formal SLA had agreed services but were unsure about what were appropriate targets for each of the services
- Network managers (and some senior mangers) were nervous about publishing an SLA since they considered schools too dynamic an environment to guarantee delivery of technical support to predetermined levels
- There was the perception among some technical staff that an SLA would be used against them, should they fail to meet the targets.

Some schools have SLAs in place with suppliers for provision of technical support. Several of the network managers commented that implementing FITS has made them more aware of the purpose of service levels and they now enforce these more rigorously to actively manage support delivered by suppliers.

A number of schools have also implemented processes for monitoring and reporting the performance of ICT service delivery and the technicians. The processes have raised the visibility of the role of technicians with senior managers, enabling an informed discussion of ICT resource management and budget allocation. Those schools which have done this effectively, analyse the data and proactively manage the service leading to increased user satisfaction.

Challenges and issues	Solutions
Lack of understanding about what levels of service are appropriate.	Several schools monitor current service delivery levels and aim to achieve month-on-month improvements for actual service delivered. They didn't publish them to users – but used them within the technical support teams as a guideline. To gain an understanding of their school's needs, network managers found that consulting with users helped them to produce an initial guide. Asking suppliers which key performance indicators they value in their managed service contracts with schools was found to be useful as they could be used as benchmarks or "aspirational targets".
Users do not consider technical support delivers a reasonable level of service.	Some schools were beginning to publish key performance indicator data on ICT service delivery to make the support process more visible to users and improve customer relations. A number of channels were used for this including: • ICT support intranet pages • emails to senior managers and key network users • posters on staff notice boards. In this way, initiatives to improve ICT service delivery are made more visible to users of technical support.

Monitoring and reporting the service delivery has raised the visibility of the role of technicians with senior managers enabling an informed discussion of ICT

Service Continuity Management

Prior to participating in this programme, none of the schools had much in the way of Service Continuity Management. Now several of the schools have documented resource plans and are beginning to conduct risk assessments and develop contingency plans. These are typically the schools which have made most overall progress in the implementation of FITS.

Despite this, the quality and robustness of the risk identification and mitigation process undertaken varies significantly, and the ability of the schools to deliver them is variable since the financial resources required to implement them may not be prioritised over classroom equipment.

Challenges and issues	Solutions
Insufficient financial resources to procure back-up and redundant equipment.	Some schools had pooled with partner institutions to acquire vital equipment such as servers and switches. This can be done at low cost and to mutual benefit. Other schools have secured access to redundant equipment from suppliers through the procurement process.
Network designs have single point of failure.	Although no quick solution to this was identified, technicians are increasingly conscious of the need for service continuity measures and are taking this into consideration in their long-term development plans and future infrastructure upgrade projects.

Financial Management

The majority of schools already had rigorous Financial Management processes in place and kept close track of expenditure – usually the responsibility of senior members of staff rather than the technicians. Few had much discretionary spend outside of the main capital budgets which are allocated at the beginning of term as part of the school's normal planning and budgeting cycle. However, several schools were using FITS to conduct better analysis of spend and make more informed and strategic decisions about their ICT expenditure and reducing total cost of ownership.

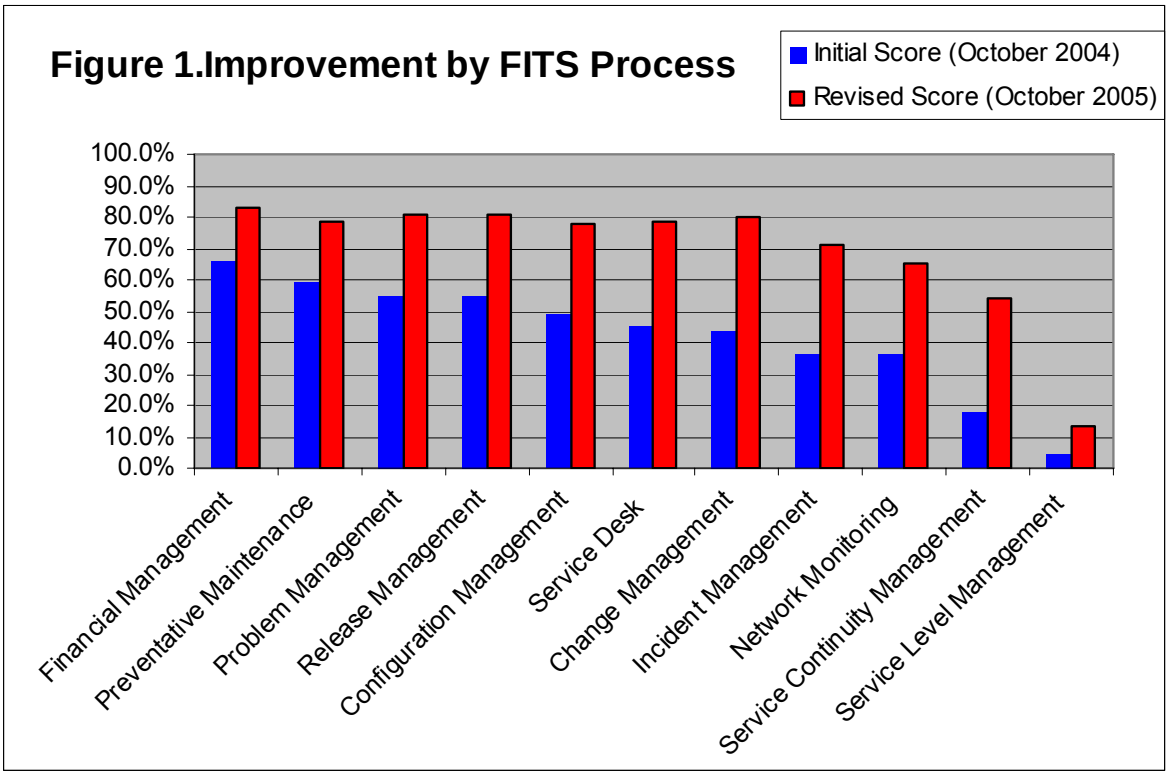
Challenges and issues	Solutions
No budgets are available outside the annual capital spend over the summer. Priority for spend is on equipment in the classroom – not back-end equipment and service.	No specific solution was identified to this issue – particularly in those schools where budgets were small. However, it is positive that the FITS Financial Management process has improved awareness of the requirements for the totality of ICT expenditure at both technician and school leadership team levels.
Senior management only consider capital spend on equipment not recurrent expenditure on support and maintenance.	Some of the schools have begun considering the total cost of ownership after implementing FITS and by using the advice on the Becta website. This enabled schools to plan and budget for future ICT expenditure in a more sustainable fashion.

FITS enables better analysis of ICT spend and more informed decisions about ICT expenditure and reducing total cost of ownership

Process improvement

Prior to implementing FITS, schools were asked to score themselves on each of the FITS processes against a series of benchmark criteria. This provided baseline data against which process improvements could be measured over the duration of this evaluation. During the follow-up visits in March and October 2005, HHES reviewed the initial scores with the technical support teams to quantify their progress in implementing FITS.

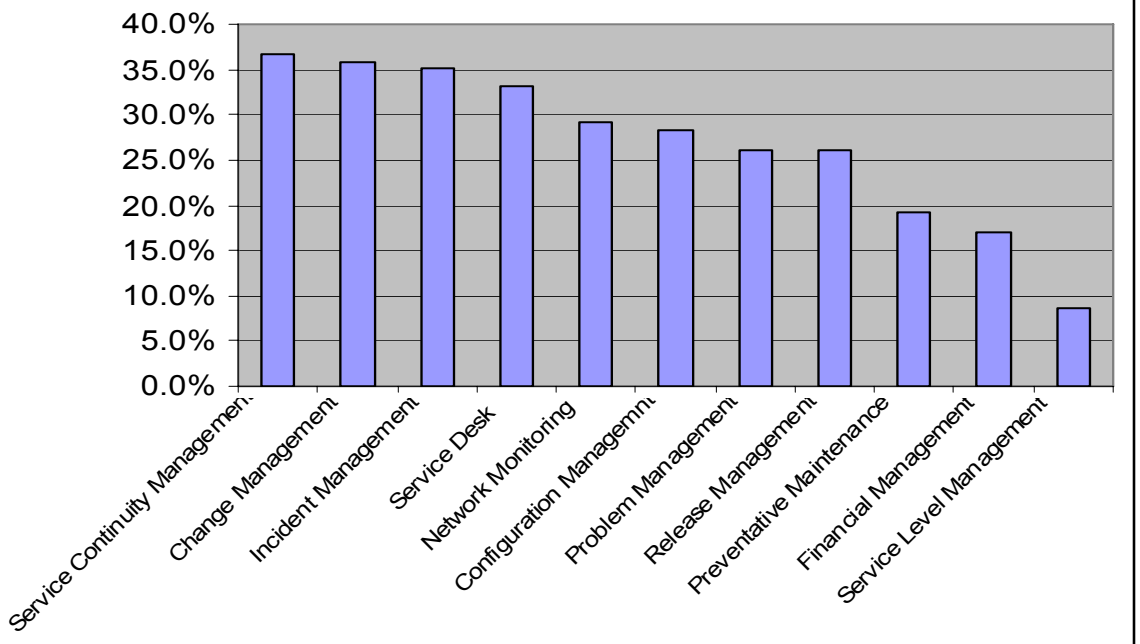
Figure 1 shows the percentage of each process implemented and compares the improvement achieved in the nine schools which had made significant progress in implementing FITS. (The four schools which failed to make overall progress have been excluded from this data in order to avoid skewing the results.)



- The graph illustrates that schools consider themselves strongest in Financial Management. This is to be expected considering how limited most schools perceive their ICT budgets to be.
- The wide range of scores (< 60% to <10%) shows the variable quality of overall ICT management delivery across the various processes. This reinforces the need for FITS to bring in best practice guidance to these disciplines.
- Service Level Management has scored low in all of the schools suggesting that users' expectations are not clearly addressed with regard to ICT service and support.
- Following the implementation of FITS, average scores are both higher and more consistent, indicating broad improvements.
- The notable exception to this is Service Level Management, which shows both the lowest score and the smallest percentage improvement. Schools will need to place greater focus and emphasis on this area.

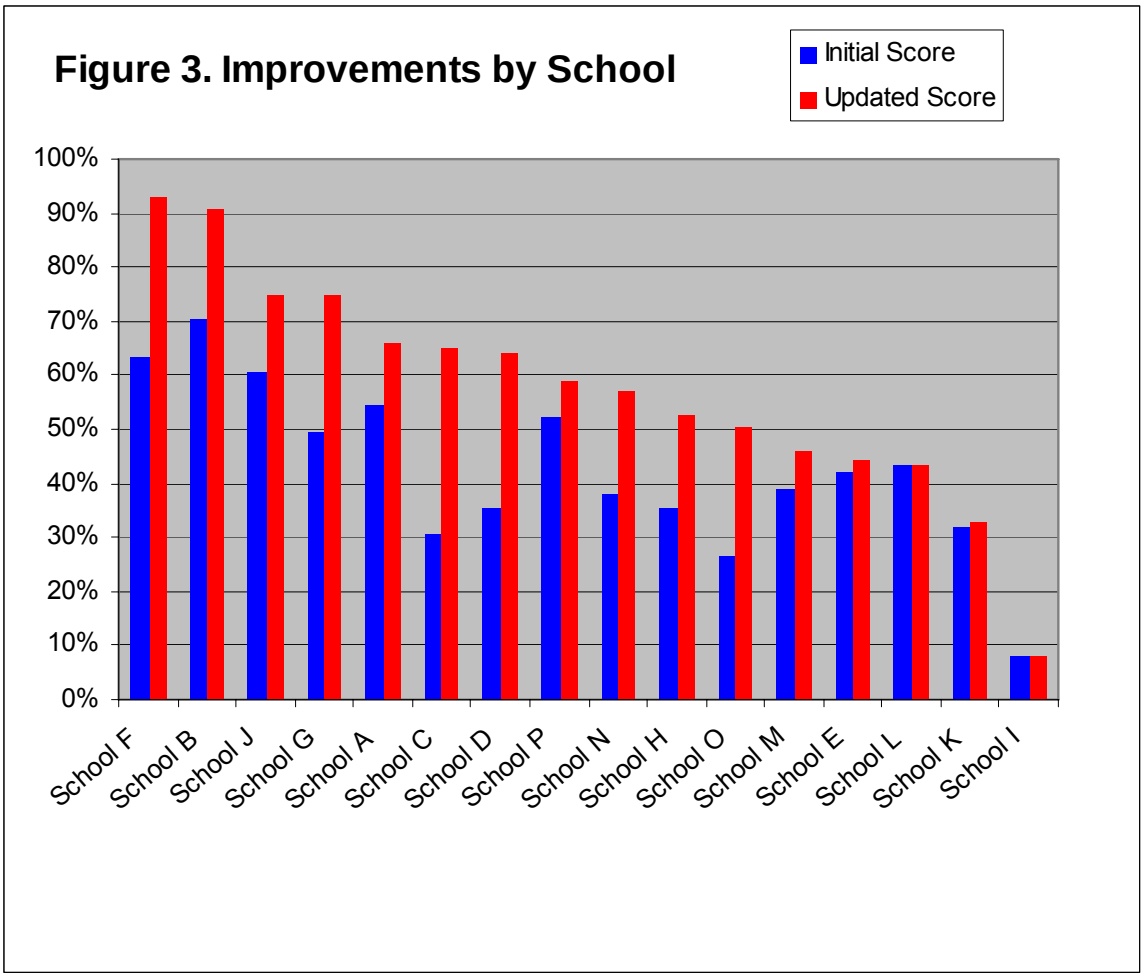
Figure 2 illustrates the processes against which the biggest percentage improvement has been made.

Figure 2. Process improvement ranking



- The biggest single improvement is in the area of Service Continuity Management. This is largely due to schools actively considering risks and threats to the ICT service and equipment, and the creation of contingency plans. This is encouraging since this was one area in which schools initially scored themselves poorly. Although schools are now considering risks and threats, some consider that financial restrictions are preventing them from investing in the additional equipment necessary to implement contingency plans.
- Change Management, Incident Management and Service Desk also show significant levels of improvement, reflecting the emphasis that schools have placed in implementing customer-oriented processes.
- Very little progress has been made in the area of Service Level Management due to nervousness among technicians and senior management about miscalculating user expectations and failing to deliver.

Figure 3 shows each school's average progress across all the FITS processes implemented (by percentage) ranked in order of most progress to least.



It should be noted that these scores reflect the schools' own view of their ICT management and, as such, they should be used for illustrative purposes only. No direct, scientific comparison can be made between different schools on the basis of this scoring. The assessors identified several reasons for differential scoring between schools:

- Some schools acknowledged that prior to reading FITS they were unclear of what constituted good practice and, with hindsight, had scored themselves higher initially than they would do now with better understanding. In several cases, the schools re-scored themselves below their initial assessment despite having delivered noticeable improvements in service delivery over the period of this evaluation.
- Several schools commented that they had initially scored themselves too highly during the introductory training to avoid embarrassment or creating a negative impression in front of their management, peers, Becta or the local authority.

In addition, the scores are based on a small number of very specific questions on the initial assessment questionnaire. In most schools, the assessors identified improvements in the management of the ICT service that were not addressed by the questionnaire – the introduction of central hardware/software purchasing policies is one such example.

Despite these caveats and limitations, it is evident that among the schools which have begun to implement FITS, the majority believe that their management of ICT has significantly improved over

the past year. In the light of these findings, we suggest that self-evaluation is a useful feature of the FITS approach, and entirely in keeping with the current trend towards greater emphasis on schools' self-evaluation processes.

Those schools who initially rated themselves more highly in terms of their ICT management tended also to show the greatest improvement in service. This suggests that the FITS guidelines were more readily adopted and delivered greater benefit in well-managed and organised schools.

FITS is more readily adopted and delivered greater benefit in well managed and organised schools

Challenges and issues

Irrespective of the positive attitudes most schools have towards the FITS processes, a number of challenges remain which need to be overcome in order to implement them effectively:

Getting commitment and support from the school leadership team

Significant commitment and support from the leadership team was identified as essential in the schools which implemented FITS most successfully. In schools where leadership support is absent or half-hearted, technical support staff tended to feel isolated and struggled to get the most value from the processes. Initial training of the key sponsor/leadership team on the purpose and value of FITS is considered essential in order to address this issue.

Staff time

All schools commented that implementing FITS takes time and effort – particularly from the network manager and technicians. In schools where levels of technical resource is low, firefighting takes priority and it is difficult to find time to review the FITS documentation, identify priorities and plan without affecting day-to-day service delivery.

Many of the technical staff participating in this evaluation worked additional hours – during the evening or at home – to introduce and document the processes. Others made time during the working week through strict prioritisation of their day-to-day activities and the exclusion of others. All technical staff were pleased that they had invested additional time to understand, plan for and implement the processes as their efforts had been rewarded with more time in the long term. The processes eliminate many of the previous problems and working in a more structured and proactive environment made more effective use of their time.

Technical support staff and senior management need to find time to plan for FITS appropriately without affecting operational issues in the short term. Leadership team commitment, discipline and support are vital to achieve this.

Customising materials

Although FITS addresses the majority of the issues likely to be encountered in a school and provides many useful tools and template documents, these need to be considered in light of individual circumstances and tailored to fit.

Schools which adapted these materials to their individual needs tended to get more buy-in and commitment to introducing the FITS processes from technical support and staff users.

Resources

Many schools consider themselves under-resourced and, as a result, ICT expenditure is often aimed at the purchase of tangible assets, such as equipment for classrooms. Without equal investment in ICT technical support services, the full benefits of ICT are frequently not realised.

Implementing FITS does not need to incur capital outlay – the main investment is in staff time (see above). However, some schools participating in this evaluation recognised that some expenditure and investment in implementing FITS processes is desirable to fully realise the benefits. The result of appropriate investment enables better reliability and use of existing equipment, improves service delivery, improves integration of ICT in teaching and learning and ultimately reduces the total cost of ownership of ICT.

Examples of how investment can work include the cost of personnel to man the Service Desk, purchasing service desk software and use of redundant equipment to deliver better network reliability and robustness.

Changing the organisational culture

Nearly all of the schools commented that they had experienced resistance from users (both teaching and administration staff) towards implementing new processes, but it was noted that the resistance reduces as FITS becomes embedded. The most common objection raised was the perception of increased administrative burden, particularly in reporting faults or requests for change.

In many schools there is a culture of stopping technical staff in the corridor or staff room to request assistance. Users are frequently reluctant to follow formal processes such as completing incident/request forms or calling a Service Desk since this takes time and effort. In addition, some users do not accept that processes and guidelines apply to them – only to others; in this respect, senior management are sometimes the worst culprits.

Making these cultural changes takes time and technical support staff will require support in maintaining the discipline required to implement new processes. The active and visible support of the leadership team was seen to be crucial in this area.

Continuity of staffing

Several of the schools have changed personnel over the course of this evaluation – both at leadership and network manager level. This often had the effect of stalling or halting implementation of FITS as new staff take time to settle in, re-evaluate priorities and bring a different perspective to the job. This is particularly the case during the introduction of new FITS processes by the network manager; progress halted entirely in one school where this happened.

Significant commitment and support from the leadership team was identified as essential in the schools which implemented FITS

Perceptions of FITS

Technical support staff

Network managers and technicians – the primary audience for FITS – are universally positive about the FITS materials and recognise that implementing and following the guidance will improve management and delivery of the ICT function.

The network managers and technicians recognised that the tools are based on ITIL and were appreciative that Becta had amended these to suit a school environment. Respondents considered the FITS advice and guidance to be well structured, logical and pragmatic. Specific comments received included:

> *"You can't disagree with it – it's just common sense"*
>
> *"Everyone can read FITS and find something that they are not doing"*

However, there is also a perception among technical support staff that it is bureaucratic and seen as tasks in addition to daily activities, rather than something which underpins them. This is particularly the case with data capture and documentation.

Many participating technical staff recognise that there are further benefits that they can deliver from implementing FITS. Although several schools have successfully moved away from responding reactively to incidents to a more proactive approach, the level of data analysis and interpretation applied is still quite basic. To fully deliver the benefits of implementing FITS, the management (and customer-facing) skills of the technicians need to be developed alongside implementation of the processes.

Senior management/leadership team

The attitude of members of senior managers at leadership team level was also very positive about implementing the FITS guidelines and all said that they were pleased to have participated in evaluating FITS.

> "*FITS is a real catalyst for change. I fully recommend it to all other schools*."

Senior management in schools that have implemented FITS most successfully stated that they are seeing benefits and improvements in the way the ICT technical support function is managed. They particularly referred to the change in management from reactive firefighting and fixing equipment to a proactive, structured and process-driven approach. Specific improvements noted by these schools included:

- better accountability of technical support staff and an improved customer service ethos. This was manifest through improved communication and relationships with the leadership team and staff users
- better management, tracking and monitoring of fault calls, ensuring requests for assistance were not forgotten or misplaced
- improved prioritisation of incident management and response through consideration of user requirements and greater focus on service levels
- improved implementation of change since process is more methodical and better planned and communicated
- a more structured and strategic approach to the integration of ICT into the school planning and budgeting processes.

The most successful schools believed that FITS is already encouraging greater use of technology in teaching and learning. This is likely to continue, since time saved through FITS processes can be used to discuss teaching and learning needs, facilitating better communication between teachers and technical support staff and helping to develop a shared understanding of requirements. Teachers also have more confidence in the reliability of equipment, or that the technicians will resolve any issues quickly if they arise. Ultimately, this will increase the likelihood of improved school performance and inspection outcomes.

ICT users

FITS as a set of guidelines is typically invisible to users – although where customer-facing processes such as the Service Desk or Change Management have been formally rolled-out, users are aware of initiatives being implemented to improve ICT service delivery.

Online questionnaires were emailed to all staff at the nine schools deemed to have made most progress with implementing FITS. The questionnaires asked users to rank their experience of ICT support at their schools and whether they had noticed any change over the past year. It was not the intention of the questionnaire to measure user satisfaction, only the change in service levels over the past year, since each school was starting from a different base.

Responses were received from a total of 44 staff across three schools. Interestingly, these are the schools that have made most progress in implementing FITS (schools F, B and J). Two thirds of all users who responded to the questionnaires indicated an improvement in overall ICT service delivery with 41% indicating “great improvement” (see Figure 4).

Figure 4. Perception of ICT Service Delivery

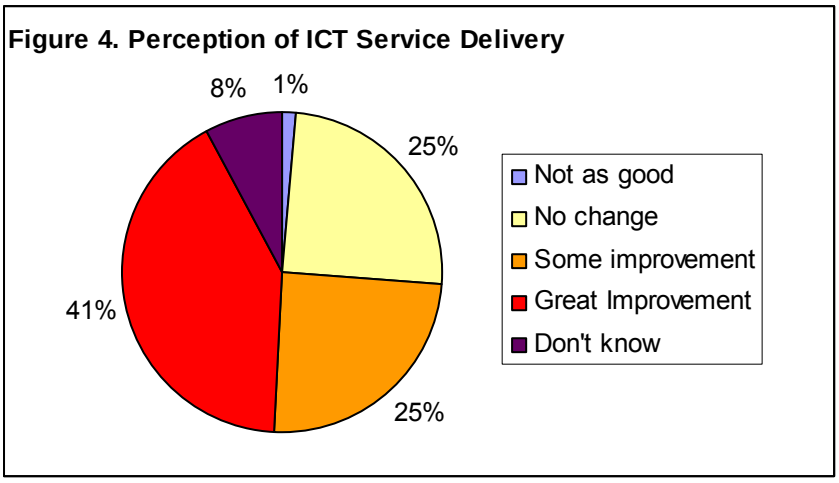


Table 3 provides a more detailed breakdown of these responses against specific measures of service delivery with the top answers highlighted in red.

Table 3. Measure of service delivery	Not as good	No change	Some improvement	Great improvement	Don't know
Ease of contacting technicians	0%	15%	17%	68%	0%
Fault-reporting processes	0%	12%	25%	57%	6%
Availability of technicians	0%	29%	13%	53%	5%
Customer service ethos	6%	10%	28%	51%	5%
Speed with which faults are resolved	3%	24%	24%	49%	0%
Information on progress of fault resolution	1%	20%	24%	46%	9%
Advance warning prior to changes in ICT systems	3%	31%	25%	36%	5%
Recurring faults	1%	25%	33%	34%	7%
Reliability of network and equipment	0%	38%	33%	29%	0%
Consultation prior to implementing changes	0%	28%	16%	23%	34%
Staff training and development on new ICT	0%	42%	33%	10%	15%

These answers reflect the approach that the schools made in implementing FITS – focusing on the service desk first and then looking at the strategic and proactive processes. It also shows that more attention should be given to user consultation on requirements – particularly training and development prior to roll-out of changes.

Selected comments received from users included:

"The technicians were already excellent and responded swiftly. This has improved the technical support processes."

"The general customer ethos of the team seems to have been strengthened by the introduction of a Service Desk. Having worked in other organisations including other schools, I consider this team and level of support to be the best that I have come across in terms of technical support, accessibility and a positive attitude to assisting staff whenever they are able too."

"I'm new to the school and cannot comment on ICT before I arrived but I feel it compares brilliantly to other schools – it's professional and structured. They seem really keen to show us new things and latest innovations. The Service Desk scheme means there is always somewhere to log your question."

"The efforts of the ICT team are appreciated and much needed, the support has seen improvements and the inclusion of the Service Desk has made a big difference in how incidents are dealt with."

"Thank you for the great efforts made to improve your service. Much appreciated. Training for new staff on the ICT systems would be useful."

"I have always found the network support team to be on hand should I have any problems, although telephone contact with the network office can sometimes be frustrating (not answering the phone)."

"I like the reporting procedure but don't get any feedback about what a problem was or if there was anything that I could have done to fix the problem."

Senior school leaders believe that implementing FITS will improve school performance and inspection outcomes

Communicating and promoting FITS

Feedback was requested from schools on the way Becta has communicated with schools to introduce FITS guidance.

Table 4 presents the findings on the several channels that Becta has adopted for communicating FITS.

Table 4. Communicating FITS

Channel/medium	Comments
Training	All schools found the initial FITS Expert Workshop training a very useful introduction to FITS. All participants considered that training both for senior managers and technical support staff will be an essential component in the successful implementation of FITS in other establishments. Several schools commented on the initial assessment spreadsheet (Exercise 1 – FITS Assessment) as being particularly useful in focusing the mind and providing an overall checklist of issues to be addressed.
Website	The website is used extensively by all schools who implemented FITS. No specific comments (positive or otherwise) were made regarding the structure or content of the website.
Pocket guide	Several schools commented that the pocket guide was a useful reference tool and had issued it to staff. One stated that it was particularly helpful as a guide for school leadership team members to raise the profile of FITS.
Downloads, documents and tools	Most schools had downloaded guidance documentation, tools and templates for the processes which they had implemented and referred to them extensively. All schools found the documentation clear, easy to read and understood the points being made. In the majority of cases, the templates had been heavily customised rather than used unmodified. This gave technicians a sense of ownership of the tools without having to reinvent the wheel.
Local champion	The presence of a local champion to promote and co-ordinate FITS has been very valuable. This provided a forum to discuss and clarify issues and get a broader perspective and independent advice on what they were trying to achieve. In addition, this was a platform to share lessons learned and some development activities.

In addition to the above, several schools commented on the usefulness of the pilot introduction and evaluation process. They stated that this provided focus and a timeframe for making things happen. Without the deadline of the follow-up visit, there was the potential for FITS to be given lower priority than daily issues. The visit provided an incentive to progress. However, in those schools which had derived most benefit from FITS, this became less of a driver as time went on and schools valued FITS for what it was delivering in its own right.

The Expert Workshop training for senior managers and technical support staff is an essential component in the successful implementation of FITS

Conclusions

All schools that have implemented some or all of the FITS processes found it to be a positive and worthwhile experience. All schools stated that they considered FITS to be a sensible and pragmatic approach to managing ICT technical support, and they believed the tools and guidance provided valuable advice as to best practice in schools.

Most of the schools commented that implementing the FITS framework requires additional time and effort in the short term from technical support personnel, senior management and staff. However, they believe that it is worth the investment in order to reap the longer-term benefits.

The benefits of implementing FITS extend beyond improved service delivery, efficiency and effectiveness of the ICT technical support function. In addition, the integration of technology into teaching and learning is improved with teachers having more confidence in the reliability of the equipment and that it will be fixed quickly if something goes wrong. In addition, FITS improves communication and relationships between the technical support staff and teachers, strategic planning and budgeting.

The schools that have been most successful with FITS adopted a logical and disciplined approach to the introduction process. It was noted that there were number of common themes in this regard:

- Leadership team involvement and commitment. In the schools that have derived most benefit from implementing FITS, the main sponsor and senior manager (usually the network manager's line manager and a member of the school leadership team) were committed to the process, familiar with the guidance and prepared to champion it throughout the school.
- Technical support staff created time to step back from day-to-day operational aspects and properly consider, plan and prioritise their approach to FITS implementation. Consequently, schools with larger technical support teams have been able to achieve this more easily than those with only a single technician.
- The action plan created at the FITS Expert Workshop clearly identified what was going to be done, why and by whom. This was broken down into discrete and manageable projects which were clearly prioritised. The most successful schools tended to focus initially on getting systems and platforms working and in place and then building outwards from these.
- The action plan identified a number of "quick wins" in order to boost confidence in the FITS guidance from users, technical staff and management. This bought time to implement the strategic and proactive processes – invisible to users – which delivered ongoing and long-term benefits.
- The FITS guidance and tools were adopted in principle and adapted to align with the specific needs and methodology of the school, for example, incident/request sheets customised to meet local needs or call logs adapted for use in a relational database.
- Data obtained from the FITS process was reviewed, analysed and used by both technical staff and members of the leadership team to proactively manage both operational service delivery and medium/longer-term strategic planning.
- Introductory training on FITS for both technical support staff and the school's senior leadership team is essential.
- Technicians from different schools worked collaboratively on implementing the processes and shared learning experiences. This was even more effective when it was championed and co-ordinated at a local level (for example, through the city learning centre or local authority).

Appendix A: Methodology

Stage 1: Production of data collection tools and checklists

HHES reviewed the Becta assessment tool to compare ICT management to best practice as promoted in FITS. This was used as the basis for gathering information from the network managers and ICT support staff on the way in which they managed the delivery of ICT support in the school. In addition to this assessment tool, HHES also developed a series of checklists and questionnaires aimed at representatives of the leadership teams, staff users and pupils to obtain broader background information on the school and the quality of ICT support delivered.

Stage 2: Site visits

HHES made an initial visit to each of the schools in November/December 2004 (see Table A1). During the visits, HHES met with a member of the school leadership team (usually the key sponsor), the network manager and ICT support staff. In addition, a selection of users (both teachers and administration staff) and, where possible, pupils were interviewed. The HHES assessor conducted a discussion with each of the interviewees based on the questionnaires and checklists developed in Stage 1 above.

Table A1. Site visit information

School	Initial visit	Follow-up visit	Final visit	Assessor(s)
School A	15/11/2004	28/02/2005	18/10/2005	Mark Harrison
School B	19/11/2004	03/03/2005	17/10/2005	Terry Freedman
School C	26/11/2004	07/03/2005	19/10/2005	Terry Freedman
School D	24/11/2004	11/03/2005	18/10/2005	Terry Freedman
School E	6/12/2004	09/03/2005	Telephone	Mark Harrison
School F	24/11/2004	21/02//2005	18/10/2005	Terry Freedman
School G	23/11/2004	02/032005	17/10/2005	Mark Harrison
School H	25/11/2004	23/02/2005	17/10/2005	Terry Freedman
School I	26/11/2004	22/02/2005	19/10/2005	Terry Freedman
School J	8/12/2004	08/03/2005	19/10/2005	Mark Harrison
School K	10/11/2004	03/03/2005	28/10/2005	Paul Hykin and Mark Harrison
School L	25/11/2004	22/02/2005	Telephone	Mark Harrison
School M	26/11/2004	08/03/2005	21/10/2005	Mark Harrison
School N	26/11/2004	21/02/2005	Telephone	Mark Harrison
School O	1/12/2004	02/03/2005	21/10/2005	Mark Harrison
School P	24/11/2004	23/02/2005	19/10/2005	Mark Harrison

The purpose of these interviews was to gain an understanding of the way in which IT support was managed, the current challenges faced by the IT support function, and the benefits that were delivered through participating in the FITS project. The users were interviewed to gain a perception of the quality of IT support delivered from their perspective, and to establish baseline data on the service. In some instances, it was not possible to interview specific interviewees on the day of the school visit due to unforeseen circumstances or staff availability. In these cases, interviews were held with staff by telephone subsequent to the visit.

Stage 3: Production of interim report

Following completion of the initial site visits, HHES drafted a report setting out the findings from the initial visits. This was used as a baseline against which each school's experience in implementing the FITS guidelines was measured in subsequent stages of the project.

Stage 4: Follow-up site visits

HHES revisited each of the schools at least once – in February/March 2005 and again in October 2005 (see Table A1).

During these follow-up visits, the HHES assessors met again with the key sponsors (usually leadership team members), network managers and ICT support staff to gain their feedback on the experience – the challenges as well as the benefits – of implementing FITS. The assessment tool and checklists were reviewed with the interviewees to obtain quantitative data on changes to the delivery of the ICT support service at the school over the period of the project.

In addition, wherever relevant, the staff users interviewed during the initial visits were also consulted to determine whether they had experienced any change in the ICT service delivery over the trial period. Pupils were not interviewed during the revisit for several reasons: this was very difficult from a logistical perspective; and due to the small sample size, it was considered that they were unlikely to have themselves experienced any significant change in service delivery over the period of the project.

Following the final visit in 2005, HHES distributed an online questionnaire to nine of the schools to be emailed round to all staff. The purpose of this questionnaire was to solicit feedback on users' perceptions in changes in ICT management and service delivery since the FITS processes were implemented.

Stage 5: Production of final report and case studies

Following completion of the site visits, HHES produced this report setting out the findings from the visits, identifying what improvements have been derived from implementing FITS, and drawing conclusions on the usefulness and usability of the FITS tools to the participating schools.

Three case studies were also produced using information gathered after the first follow-up visit in early 2005. Two of the case studies highlight the experiences of schools considered to have made most progress in implementing FITS and the benefits that they have derived from it. The third case study examines the implementation of FITS from an LEA perspective and how it has affected its daily dealings with schools. Data for this case study was obtained through a telephone interview with a representative from the LEA.

Appendix B: School assessment data

INITIAL SCORES	Service Desk	Incident Management	Problem Management	Change Management	Release Management	Configuration Management	Network Monitoring	Preventative Maintenance	Service Level Management	Service Continuity Management	Financial Management	School Average
School A	35%	30%	75%	65%	55%	75%	80%	80%	0%	25%	80%	55%
School B	75%	75%	100%	70%	80%	75%	50%	60%	20%	70%	100%	70%
School C	20%	40%	55%	25%	60%	75%	0%	40%	0%	0%	20%	30%
School D	30%	50%	20%	15%	35%	100%	0%	60%	0%	0%	80%	35%
School E	50%	35%	20%	40%	70%	75%	30%	60%	0%	0%	80%	42%
School F	80%	50%	100%	80%	55%	0%	100%	100%	0%	30%	100%	63%
School G	15%	30%	50%	55%	75%	50%	60%	80%	0%	30%	100%	50%
School H	60%	65%	75%	0%	70%	0%	60%	60%	0%	0%	0%	35%
School I	20%	10%	20%	20%	20%	0%	0%	0%	0%	0%	0%	8%
School J	85%	32%	100%	58%	60%	88%	10%	95%	20%	20%	100%	61%
School K	35%	20%	20%	50%	25%	50%	50%	40%	0%	0%	60%	32%
School L	35%	20%	50%	65%	45%	75%	20%	60%	0%	25%	80%	43%
School M	35%	20%	50%	50%	50%	50%	50%	40%	0%	25%	60%	39%
School N	65%	35%	75%	35%	70%	0%	0%	60%	0%	0%	80%	38%
School O	35%	26%	5%	37%	32%	10%	25%	50%	0%	30%	40%	26%
School P	47%	40%	65%	40%	70%	65%	40%	60%	35%	30%	80%	52%
Process average	45%	36%	55%	44%	55%	49%	36%	59%	5%	18%	66%	43%

UPDATED SCORES	Service Desk	Incident Management	Problem Management	Change Management	Release Management	Configuration Management	Network Monitoring	Preventative Maintenance	Service Level Management	Service Continuity Management	Financial Management	School Average
School A	65%	40%	60%	70%	80%	100%	80%	85%	5%	25%	80%	66%
School B	100%	100%	100%	100%	100%	100%	80%	100%	20%	100%	100%	91%
School C	75%	90%	75%	45%	60%	75%	80%	40%	0%	0%	80%	65%
School D	30%	75%	75%	75%	75%	100%	30%	100%	0%	100%	100%	64%
School E	58%	35%	20%	40%	70%	85%	30%	60%	0%	10%	80%	44%
School F	100%	100%	100%	90%	100%	100%	100%	100%	30%	100%	100%	93%
School G	90%	52%	90%	90%	90%	75%	75%	85%	5%	70%	100%	75%
School H	75%	65%	75%	100%	90%	0%	60%	60%	0%	25%	30%	53%
School I	20%	10%	20%	20%	20%	0%	0%	0%	0%	0%	0%	8%
School J	100%	65%	100%	85%	60%	88%	30%	95%	60%	40%	100%	75%
School K	45%	20%	20%	50%	25%	50%	50%	40%	0%	0%	60%	33%
School L	35%	20%	50%	65%	45%	75%	20%	60%	0%	25%	80%	43%
School M	45%	30%	55%	50%	70%	50%	50%	40%	30%	25%	60%	46%
School N	80%	55%	75%	35%	70%	25%	15%	60%	0%	0%	80%	57%
School O	70%	55%	55%	65%	70%	60%	50%	40%	0%	30%	60%	50%
School P	63%	55%	65%	45%	70%	85%	40%	60%	45%	40%	80%	59%
Process average	66%	53%	65%	64%	68%	65%	48%	64%	12%	37%	74%	56%

Appendix C: School summary reports

Case study: School A	
Type of school	Secondary comprehensive 1,100 pupils 130 staff
ICT in the school	211 curriculum workstations 30 laptops 8 interactive whiteboards 8 fixed data projectors and 1 mobile
Technical support structure	Technical support at the school comprises a full-time network manager supported by a part-time technician who works two hours a day Computer:technician ratio – 195:1
Overview of progress in implementing FITS	The network manager has made significant progress in implementing many parts of the FITS guidelines, focusing particularly on the areas of Service Desk and Incident Management. He is currently implementing more rigorous Change Management and Release Management process. Financial Management is also being improved.
Technical staff perceptions of FITS	The network manager has invested his own time in the evenings and weekends in order to implement FITS. He has followed closely to the guidance from the Becta FITS website and approached the various processes in the order recommended. He believes that FITS has brought significant benefits and consistency of approach to the way in which the technical support function is managed and delivered. Response times to fault calls has improved (now 90% are resolved in less than two days) and communication and relationships between IT support and several key users have significantly improved. The network manager considers FITS to be an excellent framework on which to approach technical support of the network, and will be implementing all of the processes as time permits.
Senior management/network users' perceptions of FITS	The assistant headteacher with responsibility for IT service delivery is also very positive about the impact that FITS has had on the overall management and delivery. He believes that participating in the FITS evaluation has been a catalyst for change within the school, and both reliability and service delivery have improved markedly as result. Although this has not yet resulted in a significant change in all users' perceptions of the service, he believes that this will happen and ultimately teaching and learning will improve as a consequence.

Case study: School B	
Type of school	Secondary Specialist sports college 747 students 80 staff
ICT in the school	7 servers 170 workstations and 90 laptops 12 interactive whiteboards Fixed data projectors in nearly every room
Technical support structure	The ICT technical support service comprises a network manager and an assistant technician Computer:technician ratio – 130:1
Overview of progress in implementing FITS	The ICT technical support team gained support for FITS through a somewhat unexpected, back-door route. Until recently, the team was housed alongside the servers in a room which was little bigger than a cupboard. After presenting a business case to the headteacher, they obtained permission to have a dividing wall removed, thereby making two rooms into one. The resultant increase in space and better organisation has had the effect of staff seeing the team in a more professional light, and this has assisted the technicians in their roll-out of the FITS procedures. FITS has taught the network manager to be more strategic in planning and to be more "visible" to teachers, so that they feel more comfortable asking for help. Recently, the technical support team has been trying to get everything they do to the same level of proficiency, and working on strategic areas such as Financial Management and documenting a service catalogue.
Technical staff perceptions of FITS	It is a very good process to follow, especially if you're struggling, but their advice is: “Don't follow the process too rigidly. Use what you think is most relevant and useful; otherwise it is too daunting. You need to *think* FITS rather than do everything to the letter.” They also maintain that it is essential to get senior management team “buy-in”. By being proactive, adopting FITS has raised the profile of the technical support team, which is now seen as a professional service department. The freed-up time has enabled more development work to take place, even though on paper not much more has been done since the evaluator’s last visit. The FITS process is much more embedded in the team’s way of working, for example, things get logged without even thinking about it so that they are acted upon in a planned way. An important consideration regarding FITS is its sustainability within the school – is it supported by current line management structures within the school? Also, personnel issues need to be considered – for example, if it is not possible to have a fully manned service desk, the technical support team needs strategic representation at senior management level. As a general principle, it would be better to be part of site/facilities management with direct access to the senior management team rather than line managed by the head of ICT, because it is difficult to maintain the lively interest of senior management when having to deal with them indirectly.
Senior management/network users’ perceptions of FITS	FITS has significantly improved ICT service delivery and proven valuable when implementing new software on the system.

Case study: School C	
Type of school	Secondary Technical College status 2,000 students 160 teachers plus 45 non-teaching staff
ICT in the school	11 servers 400 workstations and 200 laptops 9 interactive whiteboards 27 data projectors
Technical support structure	The ICT technical support service comprises a network manager, with three technicians reporting to him, who, in turn, reports to a deputy headteacher Computer:technician ratio – 150:1
Overview of progress in implementing FITS	When the school's technical support staff looked at FITS at the beginning of the project, they realised that they had no processes at all and they had to start from scratch. Initially, progress was slow since getting processes approved by the senior management team took time. However, over the course of the project huge progress has been made, with the following processes being much more fully implemented than was the case at the start of the project: Service Desk, Incident Mangement, Change Managment, Problem Management, Network Monitoring and Financial Management. In the next stage of development, the technical support team is going to look at Service Level Management so that staff know what to expect of the system rather than having expectations that can't be met. The techicians initially piloted the processes on a small scale before rolling out to the school as a whole. In this way they identified potential issues and ironed out practical aspects before introducing the change in process.
Technical staff perceptions of FITS	The technical team feels that FITS is a good idea and a good process which needs senior management team involvement from the outset. It points out the areas where great inroads can be made into working smarter rather than harder: "Get more done, but not be as tired by the end of it." What is especially liked is its completeness: "Every aspect of what we do is covered in one way or another." However, the network manager stresses that time is needed to intoduce FITS – in his view, it can take up to six months to implement a particular process succesfully.
Senior management/network users' perceptions of FITS	Senior management at the school believes FITS to be excellent and is very supportive of the guidelines. There is the view that had the school actually implemented it instead of "playing around the edges", then a disastrous system breakdown would not have occurred. The view of some users was that although they did not know FITS had been implemented, they felt it must have been implemented properly because of the improvements seen. They also thought the technicians appeared to be under less stress on the whole.

Case study: School F	
Type of school	Secondary Specialist sports college 1,600 students 112 teachers plus 80 non-teaching staff
ICT in the school	8 servers 365 workstations and laptops 6 interactive whiteboards 25 data projectors
Technical support structure	The ICT technical support service comprises a network manager, who manages a technician and a helpdesk operator, and who reports to a deputy headteacher Computer:technician ratio – 138:1
Overview of progress in implementing FITS	The school had already started to implement ITIL (the processes on which FITS is based) before this evaluation started. Therefore, most progress has been in those areas which had not already been introduced. The only processes in which the team have not now made significant progress are Change Management and Service Level Management; all other processes have now been fully implemented to at least a rudimentary level. However, the technical support team is not resting on its laurels and is hoping to start reviewing all of the processes one stage at a time.
Technical staff perceptions of FITS	The technical support team spread the word about the benefits of FITS through quite sophisticated presentation techniques. Professional posters were produced with information about the help desk service and phone number, and even mugs with the team's message and the school logo were produced. Such was the quality of the posters that it was not immediately apparent that they had been produced in-house. The mugs were ordered thorough a website selling promotional items. The technical support team believes that FITS is something that can be customised for each school. It is good, but it does require other people to take it on board. The Release Management process is good because it means "following steps rather than having to think about it"; plus it is easy to delegate. Financial Management creates a good audit and value-for-money trail.
Senior management/network users' perceptions of FITS	Senior mangers at the school believe that FITS offers a professional standard for implementation in schools which is more structured than procedures developed in-house. It is important to remember that it is not something that is done for its own sake, but in order to support teaching and learning in the school. The users, too, have seen significant improvement in the delivery of ICT support since the techncal team started implementing FITS. Network users believe the availibility and ease of contacting technicians is better, and the customer ethos shown by the team is a great improvement.

Case study: School G	
Type of school	Secondary comprehensive Specialist school in media and performing arts 1,700 pupils 106 staff
ICT in the school	500 curriculum workstations 77 laptops 23 interactive whiteboards 23 fixed data projectors
Technical support structure	The IT support service at the school comprises a network manager, Service Desk supervisor, and two IT technicians. In addition, there are two specialist technicians (music and media) who also support parts of the IT provision (video and specialist music PCs). Computer:technician ratio – 116:1
Overview of progress in implementing FITS	The school's approach to implementing FITS was to overview all the areas covered by the processes, identify those that need addressing and focus on those that will add benefit to the school. Taking this approach, the initial focus was implementing a Service Desk with a nominated single point of contact who was employed specifically for this purpose. By the end of the evaluation, the school has implemented nearly all aspects of the FITS guidelines to a greater or lesser extent. The one area that the school has yet to develop is that of Service Level Management – although it intends to develop and publish a formal service level agreement as more data from the Service Desk becomes available to make this meaningful.
Technical staff perceptions of FITS	The technical support staff all value the range and breadth of the FITS materials and consider it a logical approach to managing the college systems and infrastructure. They have downloaded and implemented the majority of tools and materials, adapting them where necessary to align more closely with the school's specific requirements. The technicians have combined software developed in-house for the Service Desk with commercial software provided under educational licensing agreements to deliver the network monitoring and management. Additional equipment for Service Continuity Management has been justified under a total cost of ownership approach as a result of improved Financial Management. The biggest challenge faced by the technicians was getting network users to follow the revised processes. However, with public support from senior management and an improvement in service delivery, this has now been overcome.
Senior management/network users' perceptions of FITS	The senior management are delighted to have implemented FITS and consider that it has been a real catalyst in moving the school forward in its use of IT –in teaching and learning as well as in administration. The benefits if FITS are wider than just the improvement in the management and support of the IT provision – it has been a catalyst for improving planning and communication within the school. Network users' perception of the technical support service – already high – has improved still further as result of implementing FITS, and the technical team now plays a greater role in strategic development of the network to support teaching and learning. Users have seen significant improvements in service delivery as a result of FITS

	being implemented. The Service Desk and single point of contact has made the biggest single impact – ease of requesting support and availability of technicians has improved greatly. Users also considered that there has been a improvement in equipment reliability, although when faults do occur they are now resolved even more quickly. *"The general customer ethos of the team seems to have been strengthened by the introduction of a helpdesk. Having worked in other organisations including other schools, I consider this team and level of support to be the best that I have come across in terms of technical support, accessibility and a positive attitude to assisting staff whenever they are able to."*

Case study: School J	
Type of school	Secondary community comprehensive school 1,300 pupils 100 staff
ICT in the school	300 curriculum workstations and 150 laptops 8 interactive whiteboards 32 data projectors
Technical support structure	The ICT support service comprises an ICT strategy manager (reporting to the school's business manager), a network manager and three technicians. Following a review of the FITS guidance, the technical support function has been restructured over the course of the year to make it more robust and increase cover for the various job roles in the event of staff absence. Computer:technician ratio – 90:1
Overview of progress in implementing FITS	The school has implemented significant parts of the FITS guidance with most focus being placed on establishing a Service Desk to provide users with a single point of contact and a mechanism by which the activities of the ICT support function may be co-ordinated. Particular progress has also been made in the areas of Incident Management and Change Management – particularly responding to fault calls and change requests. These are now being prioritised and managed according to pre-agreed targets depending on the severity of the incident. The college will continue to implement FITS and intends to address Service Level Management and Service Continuity Management as the next areas.
Technical staff perceptions of FITS	The network manager was responsible for implementing FITS and did much of the development and documentation in his own time in the evenings. He believes that FITS was worth the investment since it has improved the reliability and availability of the network and ICT resources at the school. In implementing FITS, the network manager closely followed the guidance on the website, which he considered to be "excellent". He also worked closely with the local city learning centre and other schools in the area to share experiences and solutions to challenges encountered. FITS made the technical support staff aware of what they were not doing by identifying big holes in the service, enabling them to work out solutions to improve service delivery and make it more process-driven and robust. One of the major challenges is getting staff users – particularly teaching staff – to follow and accept the system and procedures. The network manager worked very closely with the support of the school's business manager to roll out FITS and ensure there was visible leadership team support.
Senior management/network users' perceptions of FITS	Implementing FITS has been a catalyst for change within the school. It has enabled a more efficient service and freed up technical staff time to focus on more strategic issues. Communication and understanding between curriculum staff and IT services has also improved. Teaching and learning using ICT is already beginning to improve since staff have more confidence in the reliability of the network and can focus more on using the technology rather than worrying if it will work. It is considered that this will eventually manifest itself in improved inspection outcomes.