

Progress on addressing “minimum standards of IT” from the IT Review

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Date: 13 May 2016

Version 1

1 Context

The Committee has, to date, had little discussion on the “minimum standards of IT” recommended in the Review of IT Infrastructure and Support¹.

In summary:

A3. Every member of staff whose role requires access to information technology should have, at minimum, access to a system providing an appropriate level of service.

A4. Every student should have access to the computing facilities and network services necessary for their course.

Recommendation D1.

Schools and non-School Institutions should have responsibility for ensuring that their staff and students have access to the levels of service set by the ISC and referred to in A3 and A4. Schools, Departments and other Institutions should consider whether this can most effectively be done by local provision, at School level, or by use of a centrally provided service.

Members are invited to review activities, including the minimum standards policy published by the Clinical School Computing Service², in order to help define the work required to define suitable standards.

An excerpt of the IT Review is included at Appendix 1 for reference.

¹ <http://www.admin.cam.ac.uk/reporter/2012-13/weekly/6302/Revised-IT-Review-Report.pdf>

² <http://cscs.medschl.cam.ac.uk/about-us/policies/minimum-standards-policy/>

Appendix 1: Excerpts from the IT Review

46. Although these principles should not be contentious, it is worth explaining some of the underlying thinking. Two of the principles below (A3 and A4) propose the introduction of minimum standards of service for staff and students. With the raising of student fees, and with increasing competition to attract the world's top academics, it is essential that the diversity and innovation which are inherent advantages of the Cambridge structure be underpinned by some clear minimum standards of service.

47. The levels of service needed to fulfil A3 and A4 should be revised and updated as technology develops. At the present time, these service levels might incorporate the following requirements:

Staff and all students should have:

- i. a unique identifier and straightforward means of authentication for all services;
- ii. direct access to a secure University-wide (i.e. including the Colleges) wireless network, with connection via eduroam, to allow for mobile working;
- iii. a configurable web portal providing access to email, internet and relevant university information services;
- iv. user-friendly, web-based services for research, teaching, and administration appropriate to their needs;
- v. high-quality help-desk support.

Staff and PhD students should have in addition:

- i. access to personal computing facilities and on-line services in a secure environment provided by either a supported desktop or a network connection that, in combination with an appropriate personal computing device, can provide the same core services as a supported desktop;
- ii. access to a reliable fully backed-up central file-store sufficient for all normal working needs;
- iii. access to high performance computing, charged appropriately.

[The term 'desktop' is used in the generic sense to denote a display and input device giving access to a common set of personal computing functions (e.g. word processor, spreadsheet, mail client, etc.) plus browser access to university-wide information services.]

48. The delivery of the best IT services is a matter of having the right people with the right skills as much as having the right equipment, so the IT strategy needs to include the development and management of the University's IT staff.

49. Similarly, with the use of IT, and particularly high performance computing, being increasingly important across a wider range of disciplines, there will be a need to ensure that the increasing demand for computation is met in a way that minimises energy use. This consideration needs to be at the heart of the IT strategy itself, and not simply seen as the responsibility of some other part of the University.

Statement of Principles

A1. The aim of this Review has been to make proposals to help the University obtain the best value from its considerable investment in IT, not to cut costs, and in doing so to provide as well as possible what users need. There is absolutely no intention that this review will lead to redundancies.

A2. As a leading University, in the UK and the world, we should expect the quality of our information services and systems to be commensurate with our standing. The strategy for the management and delivery of those services must be driven by the needs of our users for support of their teaching, research, learning or administration.

A3. Every member of staff whose role requires access to information technology should have, at minimum, access to a system providing an appropriate level of service.

A4. Every student should have access to the computing facilities and network services necessary for their course.

A5. The University needs information systems that support its central objectives of teaching and research, as well as promoting efficient and effective administration, and supporting its statutory reporting requirements.

A6. The governance and organisation of information services and systems should be driven by a strategy that is based on a clear understanding of user needs. The strategy needs to respond to and exploit the opportunities provided by technological developments.

A7. In order to provide world-class information services and systems, high priority should be given to the support, development, and retention of talented and

committed computing support staff. The University should provide these staff with high-quality career opportunities, and make the best use of their skills.

A8. In Cambridge's devolved structure, there should be space for innovation in service provision, and different Institutional needs should drive the design and delivery of the services that are provided. Schools and Institutions must accept joint responsibility with the University for delivering the minimum levels of service referred to in A3 and A4.

A9. The governance structure should ensure that the University's needs for information systems and services are met in a way that reduces carbon dioxide emissions as much as is practicable.

50. The panel believes firmly that these principles, and the detailed recommendations set out later in this report are vital for the University at the present time. In particular, it would stress that it sees the key benefits as being:

- Clarity on the standard of service that people, staff and students, can expect, alongside clear accountability for delivering services to an agreed standard;
- A strategy and process to determine which services should be provided, and the investments to be made in them;
- Systems that will allow for the user voice, from every part of the University, to be clearly heard at every stage of development of provision;
- Better conditions and opportunities for IT staff;
- Better overall service resulting from better investment of our resources.

51. The rest of the report consists of discussions and recommendations in each of the key areas considered by the Review.

SECTION B - GOVERNANCE

52. The panel received a large amount of evidence relevant to the strategy for, and governance of, the University's IT provision. In many cases the points made described, for instance, the lack of, or quality of, a particular service. However the panel felt the underlying issue often concerned the strategic direction of the University's IT, and the way decisions were taken, as much as the specifics of the service or system in question.

53. On Enterprise and Information systems, the panel formed views and took evidence on services that are not provided, either by one of the central organisations, or elsewhere. For example simple, user-oriented, systems for recruitment, claiming and payment of expenses, or room booking across the University either do not exist, or are weak. There is no system which can give Principal Investigators instant access to the up-to-date information they need to manage research grants. It is unsatisfactory that students were not able to access all the services they needed through one, easy-to-use web portal and that new students

cannot access Raven-protected services and information until they actually arrive, something which was said to compare badly with other Universities. The difficulties caused by the diversity of e-mail systems and the weakness of web search functionality across the University, were mentioned, as were the challenges for consistent branding caused by a variety of systems supporting websites. The organisation for the central purchasing of software licenses was another area that attracted some adverse comment, although the panel was pleased to see recent developments from the UCS which aim to address this, at least in respect of software for teaching and learning.

54. It was also far from clear that the prioritisation of investments in these systems was driven by a co-ordinated overview of the needs of users from all parts of the University, academic and administrative.

55. Moving to standard provision of machines and networks, there was adverse comment on the lack of easily available and large-scale file storage and back-up services which could meet the growing needs of Departments. Related to this, the actual standard of service provided to staff and students varies from department to department, and leads in some cases to a poor user experience. The departmentally focussed system of decision taking cannot ensure that there is a minimum standard of service, and also leads to additional expenditure on multiple small-scale implementations, with Departments duplicating work.

56. Departmental responsibility for IT provision means that it is difficult to steer the total IT spend across the University, but the lack of a single body with a clear oversight and control over the budgets of the central organisations makes it difficult to ensure that even the central spend is allocated to best effect.

57. As well as the duplication of work between Departments and Institutions, the panel saw a risk of duplication between UCS and MISD, as there were no clear dividing lines between their responsibilities. The most cited example was the way both organisations provide Content Management Systems for websites, but the panel felt the key point was not the duplication *per se* but that it did not appear to have been the result of a clear decision that two systems were needed and was symptomatic of a wider problem of a lack of strategic oversight of the priorities of the two organisations.

58. The UCS, in its submission to the panel, argued for a strengthening of the central strategic function. The UCS considered that the ISSS had produced a strategy with good high-level objectives, but did not have the levers required to implement it. In particular the UCS felt the ISSS was in an unclear position with respect to the work of MISD. Furthermore, the UCS submission argued that the remit of the ISSS should be extended to include not just the expenditure of MISD, but also that of CARET, the High Performance Computing Service (HPCS), and Schools and Departments.

59. Material from MISD made similar points about how the ISSS had struggled to operate strategically, and had become too involved in the detail of operational

matters. The comment was made that the strategic review of the HR and Finance Systems was in fact driven from within the Unified Administrative Service, rather than by ISSS. MISD argued that the ISSS should become a smaller body with a clearer focus on strategy, leaving the details of information systems to specific committees with the necessary expertise. The MISD submission also argued for a strengthening of School involvement in IT, so that the ISSS could include in its membership Heads of School and School IT leaders, as well as PVCs and central service providers.

SECTION D - SCHOOLS, DEPARTMENTS AND INSTITUTIONS

100. The panel received evidence from people from Faculties and Departments, across all the Schools. Inevitably the situation varied between different Schools and Departments. Larger Departments tended to be fairly satisfied with their service provision. Typically these Departments had teams of Computer staff, who were able to take responsibility for different aspects of the service; provision in these Departments was planned, and there was a systematic approach to managing requests for help. These Departments tended to be able to innovate, and develop (for instance) local front-end modules for centrally provided Information Systems with the result that their users had a system which was well matched to their needs.

101. Against that, the situation in smaller institutions was sometimes less positive. The panel heard worrying accounts of severe difficulties in some smaller institutions. In one case, a power surge had brought down servers, and the resulting problems had not been resolved for several weeks at a very busy time of year. The impact had been severe, particularly on administrators, who, unlike some academic staff, did not have the option of using College systems, and who did not know, from day to day, whether they would have a workable system. The situation had led to real problems for the institutions' small teams of Computer staff, who felt that it had not been

possible to get urgent practical help from experts elsewhere in the University, perhaps because it was seen as a local problem. More detailed investigation indicated that the system had simply been stretched well beyond what it was designed to cope with. This suggests, perhaps, a lack of time for strategic planning, and lack of resources for the system's development.

102. Although the views from Departments differed, there was no indication of widespread dissatisfaction with the underlying model in which decisions about service provision are taken locally rather than centrally, and central services are offered rather than imposed. There was also no widespread dissatisfaction with the services provided, although some individuals felt their services were not as good as they might be. The panel felt that the professed satisfaction of many staff with their local provision might, at least in part, be the product of ignorance of the types of facilities that could be made available in a modern well-managed university.

103. Another common theme across Departments large and small was the value placed by users on having local, responsive, and expert support from dedicated IT staff who understood the needs of the institution. That said, there was also evidence of the problems which resulted from those local IT staff having to provide and manage everything from the point of presence onwards, including networks, servers and desktop machines, as well as local information systems and websites, alongside some local training requirements and technical support for audio-visual systems. Local staff might also need to support research computing. In some cases local provision depends on just one individual, with a single point of failure posing an obvious risk to the operations of the institution.

104. The panel felt that local provision of those service elements which are generic across many departments (networks, servers and standard desktops) is inherently inefficient, leading to duplication of the work in other institutions, taking local staff away from tasks where their specific local knowledge and particular skills could be more profitably applied.

105. There was some suggestion that local provision of basic computing in some smaller departments was less up to date or effective than it might be, perhaps as a result of local staff not having the time, amongst all the other pressures, to plan strategically how the local provision should be developed and updated. There was also a risk of lone Computer Officers operating in isolation, despite the provisions for information sharing with colleagues, and being unaware of solutions and new developments elsewhere in the University, which they might be able to adopt. Such staff were often managed by people who had no particular technical knowledge, and who as a result were unable to provide either support or constructive challenge to the local IT staff.

106. Uncertainty of funding was also cited as a contributory factor to the lack of strategic planning, particularly in smaller institutions, where there is unlikely to be the flexibility to smooth fluctuations in funding sources to manage IT investments. It was also clear that there were many instances of grant-funded Computer Officers or

Post-Doctoral Associates spending time on routine desktop support or systems administration. Apart from the impact on the individual, where there can be benefits as well as costs, this can pose real risks for Departments' ability to retain and manage continuity of expertise.

107. The panel received evidence on departmental computing from the Head of the Clinical School Computing Service (CSCS), which is a large provider of utility computing to about 2200 users in the School of Clinical Medicine, through a charged-for generic service to many smaller Departments, using industry standard and mature products. More sophisticated "academic" IT is the responsibility of Departments. The CSCS provides a network to each desktop, supporting devices running Windows, Mac-OS or Linux, and they run an Exchange server for e-mail and calendars as well as a help desk, which operates largely by telephone or e-mail. The charges made include provision for a sinking fund for replacement of network equipment, but not individuals' desktops, although they are happy to procure devices for individuals. The result is that CSCS recovers costs for the network, data, storage, helpdesk and support.

108. The CSCS has had to address the question of local versus central service as it has expanded its operation across the School (moving from supporting about 650 desktops in 2007 to around 2200 now). Their experience has been that Departments have been happy with the remote help-desk support model, backed by a strong service culture. The comment was also made, after the experience of migrating many departments and users onto the service, that customer requirements tend to be more similar than departments themselves sometimes believe.

109. Particular advantages of this approach were: greater clarity about the total costs; more opportunities and variety for staff, as a result of working in a larger IT organisation; a consistent approach that simplified the overall network, making it easier to solve problems when they occurred, and allowing the retention of a small stock of spares in house which could be used to fix very quickly and easily a large proportion of the problems which arose; there were also economies of scale in purchasing. Above all, the CSCS has been successful in driving a service culture, in which there was a sense of accountability to the users.

110. The panel met a representative of Zoology, a Department that was in the process of migrating its basic IT desktop provision to the CSCS system, following a review of its existing internal provision. Although the migration was not complete at the time of the discussion and was taking longer than originally planned, the impressions of CSCS had been extremely positive, and fears about the quality of support had not been realised.

Conclusions and Recommendations

111. In the light of the evidence from larger and smaller Departments, a number of points are clear about the future of provision in institutions. First, decision taking and budget management, in a devolved structure such as the University, need to

remain devolved. Second, while there was obviously a great deal of informal networking and mutual support, there was a need to strengthen collaboration between institutions so that decision taking could reflect mutual experiences across Departments, sharing of best practice could be improved, and more effective cover could be provided for IT staff. The panel therefore felt that Schools would usually be the right level at which to take decisions about provision and how it would be organised to meet the University's minimum standards, within available resources. The panel was also mindful that some larger Departments were very successfully operating their own provision, and would see little to be gained by having decisions taken at the School level. There must be flexibility for responsibility to remain with Departments, subject to the minimum standards being delivered.

112. It is clear the University should promote opportunities for a wider range of Departments, especially the smaller ones, to purchase from the centre their essential "utility" computing, such as provision of desktops, file storage and back-up, and the operation of the local network. This is in line with recommendation C4 about the need for an affordable central service. Evidence suggests that support for routine computing operations can successfully be provided remotely, despite the initial fears of staff in Departments that this would cause problems. It is also likely that many Departments will wish to retain some local support, to handle matters other than the basic provision of networks and desktop services. If that local support team is relieved of the day-to-day maintenance, it will be more able to undertake specific activities which add more value to the Department.

Recommendation D1.

Schools and non-School Institutions should have responsibility for ensuring that their staff and students have access to the levels of service set by the ISC and referred to in A3 and A4. Schools, Departments and other Institutions should consider whether this can most effectively be done by local provision, at School level, or by use of a centrally provided service.

113. The work at School level will require some expertise and resource in IT matters at that level. The panel is convinced there is a need at School level for both an academic "user" lead and a leader among the School's IT staff (an IT Co-ordinator). The details of these roles will differ between Schools. If, for instance, in a School with large Departments, those Departments retain complete responsibility for delivery, the role of the IT Co-ordinator within the School will obviously differ from a case where the School is taking on delivery and the IT staff are employed at School level where the role will be much more managerial. But in any case, close co-operation between the academic and IT Co-ordinators is key, and both roles will need to be well integrated with the School's own internal decision taking processes. Between the two roles, they will need to ensure that the following three key tasks are covered:

- actively managing IT provision across the School;
- co-ordinating across the School to advise Heads, support local staff and ensure standards are met;

- influencing the centre to ensure that centrally managed services meet the needs of the School.

The panel would expect that many IT Co-ordinators and academic leads would also be involved in the sub-committees of the ISC.

Recommendation D2. Each School and non-School Institution should identify or appoint one or more IT Co-ordinators from among the IT staff in the School. Each School and non-School Institution should also appoint a senior academic (or equivalent) as the user lead.