User Services

Desktop Services

1 During the reporting period, a vast amount of time and effort has been dedicated to planning and preparing for the relocation of the Desktop Services infrastructure due to the forthcoming closure of the Arup Machine Room later this year. The Desktop Services equipment is scheduled to move to multiple new locations in August 2013 which will have the side effect of introducing greater resilience to the systems by improved geographic separation.

2 Planning the detailed migration of the connectivity technology used within the Desktop Services infrastructure from Fibre Channel to 10Gb Ethernet is well underway. This migration will commence in July, ahead of the main relocation and will have the added benefit of making the main move easier whilst aiding the introduction of greater resilience into the main systems.

3 MCS sites have continued to be made aware of the need to ensure hardware and licensing is in order, in preparation for the roll out of Windows 7 to the MCS this summer. Windows XP will be completely withdrawn from service at the same time.

4 Windows 7 software requests have been prioritised and the vast majority of requests will be packaged for deployment this summer, alongside MCS Linux and MCS Mac software updates.

5 The Managed Print Service has continued to grow with a further 6 institutions adopting MFD’s and “Find Me” print queues during the reporting period.

6 Work is currently underway to investigate how printing from mobile devices can become part of the functionality offered through DS-Print.

7 The Phoenix User area has temporarily been re-purposed as a Mac teaching room whilst the UCS Service Desk is relocated into the Balfour Mac Room. This has occurred ahead of work starting to move the Titan Teaching Rooms to Cockcroft Level 2 in mid-June.

8 An MCS User Survey was launched in April 2013 and is scheduled to run until mid-May. The survey is intended to aid the planning futures services and requirements.

Desktop Services Outages

9 There were no unplanned outages to the Desktop Services systems during the reported period.

Service Desk

10 The Service Desk processed a total of 7,280 requests over the reporting period and resolved a total of 2,714 technical enquiries from amongst the total number of requests.

11 Tuesday 5th February proved to be particularly busy day for the Service Desk with over four times the usual number of requests received as a result of a phishing attack supposedly from the “Webmail Upgrade Support Team” and citing the email address helpdesk@cam.ac.uk. The Service Desk worked with second and third line UCS groups to help minimise the impact of the phishing attack.

12 The University Telephone Switchboard (part of the Service Desk team) dealt with 7,808 telephone enquiries over the reporting period.

Institution Support

13 The offsite backup service run for clients of the Institution Support Service has continued to grow in popularity. The service enables client institutions to backup data off-site for Disaster Recovery purposes.

14 The Service is currently looking after systems for a group in Plant Sciences. This includes specifying and commissioning server hardware. This group was also assisted in using the CamGrid pool to deliver an urgent analysis to the government on the spread of ash dieback disease.
Also in Biological Sciences, the Service has assisted with the departmental IT review of Biochemistry.

A member of staff has assisted CRUK in a project with ARM involving a new server architecture. This has led to the member of staff concerned having a poster and presentation accepted for ISC 2013.

Training Services

A new initiative to support University staff development was launched in the Lent term. This focussed on certified qualifications for Microsoft WORD and EXCEL. As a consequence two UCS instructors became Microsoft Certified Trainers (MCTs) and 11 candidates have been successful in passing the exams to date.

In response to demand for training relating to current web authoring techniques, a new course “Web Authoring: An Introduction to Responsive Design” was delivered to web designers from across the University. This course is now part of the termly course programme.

The suite of programming courses was further expanded by adding “Oracle Java Fundamentals (Online)” to the catalogue of Oracle training courses.

Following on from the “Train the trainer VMware course” run at the UCS last year, UCS instructors have designed and delivered a “VMware VSphere 5: Install, Configure, Manage” course to 18 computer officers.

Two new online courses were added to the portfolio of courses aimed at supporting staff development of the IT Officer community. “ITIL Foundation” which provides a best practice IT service management model and “PRINCE 2 Foundation and Practitioner” which provides a process-based method for effective project management.

UCS IT Exhibition 2013

Plans are underway for the 2013 IT Exhibition which will happen on Wednesday 20th November in the Examinations Halls on the New Museums Site.

Special Exams

Preparation for the annual Special Exams is in full swing with three student open days having been completed in late April / early May.

Assistive Technology

Seven group training sessions have been run during the reporting period including a session specifically focussed on using voice recognition technology.

Twenty five one-to-one support sessions have been provided covering a range of different assistive technologies.

Videoconferencing

In excess of 40 videoconferences have been supported in the main studio during the reporting period. Many of which were complex multi-way conferences requiring complex set-up and pre-conference testing.

New portable videoconferencing kit has recently been ordered to replace the current equipment which is 7 years old and no longer supported. The new kit has full HD capability and should be available for use from June 2013.

Online Services

Web Services

Falcon sites are created in an unpublished development state when first requested. When a site is ready to go live the site is attached to a public server name. Since the last report the Service has transitioned all the unpublished Falcon sites to Project Light. As their administrators adapt to Project Light and complete their content entry the sites will go live, starting out in Project Light styling. The Service has also transitioned 29 published sites. It is hoped to have the remaining published sites converted to Project Light by the start of the coming academic year. A vacant
support post for web services has been filled; the new member of staff will be starting on 20th of May and will be working on Falcon in the first instance.

More generally, considerable work has gone into (and continues to go into) the Project Light templates, debugging issues as they arise. The University is undergoing a dramatic transition in how much work is required to run a website in the University's house style and the Service is expecting this work to continue for at least a further year. Support has been given both in terms of managing the styles for individual pages but also in reorganizing web sites' architecture to follow the style Project Light expects.

A search for a replacement for the Ultraseek web search engine has been completed with Funnelback being the successful candidate. Work is well under way to transfer the web search functionality to this system over the summer. Meanwhile the search front end has been converted to the Project Light style.

The University's main web site, www.cam, (and the associated webmaster@cam email address) were transparently moved to MISD's Drupal system to run in Project Light. Various indirections were set up in the DNS and in MISD's load balancer to make this an instantaneous transition. The Raven web authentication system has also been upgraded to use Project Light. This provides for a far better user experience on small format devices where the old user interface had been difficult to use.

The University map has been upgraded both in appearance, to work with Project Light, and to support annotations on the map. The online map is becoming something of an exemplar for what can be done with OpenStreetMap and the Service has received requests to give presentations on it at a number of conferences.

**User Authentication**

29 Work has started on a password management application. This will provide a single point to reset passwords across multiple services, granting delegated password management rights to specially nominated staff within the institutions while providing users with opt-out rights and a complete audit trail of their password's history. It is hoped to have this ready for the new academic year or, failing that, the calendar year. This will go a long way to address the desire of institutions to be able to reset their own staff and student passwords without the currently required visit to the UCS Service Desk.

**Directory Services**

30 The Service has written a Python 3 client library for the lookup web API. (The other supported client languages are Java, Python 2 and PHP 5.) The web API has been live for eight months now and is receiving 2-3 million queries a month. (For comparison LDAP gets 4-5 million queries a month.)

**Streaming Media Service**

31 The pilot live streaming service continued to build experience, covering the Vice-Chancellor's opening of the Centre for Infectious Diseases and the Dalai Lama's audiences in St. John's College. The latter gave the Service its first experience of streaming into a third party content delivery network and provided the content for the YouTube version. The Streaming Media Service itself (showing stored video) has shown 4.3M videos in the past year, slightly down on last year's figures of 5M. 62 institutions now store ten or more media items on the SMS.

32 Work is currently scheduled to improve the SMS's support for embedding its video in other pages, particularly pages with responsive styling as required for Project Light.

**Human Tissue Act Database**

33 Work continues on a web application for tracking human tissue in the University for compliance with the Human Tissue Act.
Work has started on replacing the current webmail interface with one based on the RoundCube system. This has been restyled to match the Project Light style for desktop use and work is underway to integrate its addressbook functionality with lookup. The Service will switch from old to new over the summer.

The TLS certificate system, a manually labour-intensive system has been modified in light of JANET’s changes to the service we resell. These changes were originally scheduled for May 5th, but have been delayed to June 3rd and slightly modified (again).

The load on the two members of the division who contribute to CamCERT has increased following the retirement of the CamCERT senior member and the introduction of an additional member from another division to be trained up.

In other security news, the UCS has assisted the Kent constabulary with its investigations, leading to a suspect pleading guilty to attempting to hack the University's main web server. The Service has also been liaising with the Information Compliance Office regarding the "GhostShell" incident. While no personal data was obtained from the two University (and one non-University) web sites, the Information Commissioner's office saw fit to write to the University with an “actions required” ruling. The Service has begun a campaign to have departments not abandon their web sites as these abandoned sites are the primary weak point in the University's online security.

CRUK staff officially transferring to the University at the beginning of the year. User Administration staff liaised closely with IT and HR staff at CRUK, the University Project Manager and CHRIS staff to ensure a smooth migration onto UCS systems. All CRUK staff were issued with CRSidS and associated UCS accounts. Careful preparations in Michaelmas ensured that 143 returners were matched to existing CRSidS with a further new 133 CRSidS and associated accounts created and collected in December so that CRUK staff all had access to their UCS accounts and electronic resources from 1st January 2013.

Last May the Service reported that a hacking and denial of service attack that had caused online services staff to divert significant resources to defending critical University IT infrastructure during Lent 2012. This was reported to the police on the recommendation of Janet. Their investigation led to the arrest of Mr Lewys Martin, who pleaded guilty to 9 computer related offences committed against the police, Oxford and Cambridge Universities in April this year at Maidstone Magistrates Court.

Since January the Service has also been involved in responding to an Enquiry from the Information Commissioner regarding the alleged disclosure of Personal Data from two servers targeted by hackers that were hosted by the Cambridge Institute for Medical Research and the University Library. Whilst no actual disclosure of personal data occurred the Information Commissioner has made recommendations to the University which we draw to the Syndicate’s attention here:

Case Reference Number ENF0476417

... Action required

“However given that more sensitive information could have potentially been obtained as a result of such attack I strongly recommend that you review and update your IT security arrangements regularly to ensure that they remain up to date in order to prevent unauthorised access and attacks on your IT systems from being successful in the future. Furthermore in relation to passwords I would also recommend that you consider using a slow-to-calculate modern method of hashing passwords with a variable work factor so that the strength of the method can keep pace with technological developments.

Whilst the above measures are suggestions, I would point out that any further incidents involving the University will lead to this matter being revisited, with further enforcement action considered as a result. Further information and guidance relating to data security breach management is available on our website at: http://www.ico.gov.uk/for_organisations/data_protection/lose.aspx”
There has also been an outbreak of unsolicited bulk email in relation to the recent local government elections. In two cases members of University staff send unsolicited bulk email from their @cam.ac.uk addresses to over 3,000 students in support of different candidates. In one case the originator was the candidate in question, in the other their spouse. In both cases this was been raised with them by their Head of Institution and they have been left in no doubt that this contravened the ISSS' published Rules and Guidelines.

Preparations are now in progress for the annual purge of departing students. This year efforts are centred on the departing undergraduate cohort. Warning messages will be sent out to all those actually expected to complete their courses this Summer, whilst preparations are in hand to exempt those who currently have active applications to continue in Michaelmas 2013 from the cancellation process. This year will also mark the first cohort for whom Raven authentication continues to be available after departure, and so significant effort has gone into adapting the cancellation process to accommodate this new requirement.

In previous years the Service has also attempted to purge departing MPhil students. However, significant variations in individual course completion dates over the last two years have made a mass purge increasingly impractical. Consequently departing MPhil students are now being handled as leavers in the monthly mini-purge process. The mini-purges continue to provide a successful mechanism for handling the cancellation of departing staff and graduate student accounts. Since January the accounts of 3,335 leavers have been cancelled.

Managed Cluster Linux

Following a change to Ubuntu's support cycle the Service has decided to stay with Ubuntu 12.04 for MCS Linux and to upgrade it rather than transition to 13.04. The Service will also be moving the Linux desktop to a 64bit image.

Software Development

The Service has been investigating the Django web application framework. Initial indications are positive and it has targeted a web application to assist with Shibboleth deployment as a test of whether it will work for real tasks.

Other internal work has been on bringing in a new version of the RT system used for tracking tickets. It is hoped to have a more maintainable system as a result of this work and to spread its use further within the UCS. The new version will also default to having automatic acknowledgements of ticket creation and resolution, features greatly requested by our users and by University IT staff respectively.

Scientific computing support

A number of single session "Further Python" courses have been converted into self-paced worksheets. The Service is running a number of these in parallel in a single class. The result is that a number of courses with single figure turnouts have been replaced with a smaller number of more flexible sessions attracting larger numbers each. The Service is currently adding to the set of these self-paced courses.

The CamGrid condor pool continues to run and a half-day workshop was given on it for fifteen people in January. Another is scheduled for late this month.

A member of the Service member of staff was part of the BSI delegation at the ISO C++ (SC22WG21) meeting in Bristol.

There has been a campaign of updating older operating systems as SLES10 (SUSE Linux Enterprise Server v10) reaches end of life. Various locally adapted packages have been updated for the newer version. Alongside this there has been a campaign to virtualize servers wherever possible. This is coming to an end with all currently virtualizable services now virtualized. The situation with the currently "physical" services will be reviewed from time to time.

Migration Planning

Considerable effort has gone into planning the move out of the Arup machine room into a combination of the Arup sub-basement Central Network Hub, the Roger Needham Building, and the Soulsby Building. This has absorbed, on average, 1 FTE from the Online Systems Division over the course of the reporting period, but its impact has been far greater than that low number
suggests. The continual interrupts from the preparations to make the move successful have impacted on practically every member of staff and every project. The precise strategy to migrate each service without loss of service varies according to its precise circumstances. However, all the "small" services that can be virtualized have been, and the VMWare facility to migrate virtual machines between physical hosts without interruption will be used to migrate these out of the Arup. The Hermes mail store will have its physical hardware moved. To maintain the levels of redundancy expected through the move an additional replica of the users' mailboxes has been created. The live service is now running from the Redstone facility and a replica from the Arup. This replica will be shut down and moved to the Roger Needham Building with the second replica running from the Central Network Hub during the move. Similarly, a third instance of the Falcon data is being maintained and the live service run from equipment hosted in a third party commercial co-location facility for an equivalent move of its physical hardware from the Arup.

Networks

Network Outages

12 Feb (2hrs)  
CUDN NAT – failure of backend switch connecting redundant halves of the service plus software bug in NAT firmware.

12 Feb – 7 Mar  
CUDN – multicast routing from internal sources failed due to RPF multicast table error. Problem not reported for some while, fixed quickly when aware of issue.

24 Feb (2hrs)  
CUDN – smoke from Isaac Newton Institute PoP. Replacement configured and installed. Cause not yet determined.

March  
VPDN – brief periods of outage due to load issues on RADIUS server. Server reconfigured to reduce load.

CUDN

52 The majority of the work over this period has been preparing for the summer's move, including:

- Various services need aspects making redundant or separated to support the move without disruption to services.

- Planning of migration of CUDN core and site node at New Museums Site from Arup 301 to new Central Network Hub.

- Planning of move of JANET/EastERN connection from Arup 301 to Central Network Hub and associated reconfiguration (including UKLight services).

- Internal UCS/MISD matter: designing of new Roger Needham Building (RNB) office network for UCS and MISD, including support for potential eventual merger.

- Planning for an upgrade of the CUDN's connection to JANET/EastERN from 10Gbit/s to 20Gbit/s.

53 Work on splitting VLANs across the CUDN continues, reducing the number to around 20 at present (down from 256 two years ago and over 50 last summer). These changes improve resilience and reliability by making it easier to contain faults within a single institution.

54 A planned shift of the EMBS CCTV Security system from unicast to multicast has triggered a small review of multicast configuration on the CUDN: the CCTV system shifts well in excess of 1Gbit/s 24 hours a day and will increase; the existing use of unicast has caused issues during a number of incidents (in particular during a fire in the Cavendish Laboratory) due to the increased number of receivers of video streams.

55 The multicast reorganisation is in the final stages of completion to introduce redundancy, improve performance and introduce security to help prevent disruption to traffic due to misconfiguration. It has also triggered a revision of the CUDN's multicast group addressing policy to bring it in line with JANET and European Research standards, allowing some traffic which previously was forced to fall back to unicast to use multicast.

GBN

56 Since the last report, 101 new circuits have been issued. These are a mixture of new circuits and diversions for existing circuits caused by the ARUP building refurbishment.
Progress with the Addenbrooke’s 2nd link has been disappointing. Redstone started initial instillation discussions with the Trust, but the wayleave, although agreed, hadn’t been sealed by either the University or the Trust. The wayleave has now been sealed. Negotiations with NHS Trust had restarted, and were once again held up with discussions regarding incorporating 2 further ducts for the Trust’s use. The Trust has now rescinded their request and the original proposal will continue. In April & May the Trust is carrying out works in Adrian Way, which is the route of the 2nd link, so these will have to be completed before work can commence on the 2nd link. These works will also have to be co-ordinated with the Huntingdon Rd GBN diversion, which Redstone are due to start in May.

Work has started on the new Central Network Hub. The GBN cabling is coiled, waiting for the facility to be handed over and enable the GBN cables to be presented.

King’s College are developing the old Barclay’s Bank site on Bene’t St. Proposed to connect a duct into the rear basement to connect site to NMUS and install a mini GBN node.

North West Cambridge (NWC) Project will raise an order with Redstone to implement 2.5km diversion along Huntingdon Rd. This will take the GBN off-site, provide a critical second link to the NWC site and provide connectivity for existing college hostels on Huntingdon Rd. Work due to start in May.

Network Installations

A new CUDN PoP has been installed at the Needham research Institute together with local network cabling.

Delivery of the remaining secondary CUDN connections continues. The last campus to complete is the New Museums site. This had been delayed by uncertainties relating to the Arup building and protected cable routes across the site. The current goal is to complete this work mid-May 2013.

New single-mode optical fibre cabling is being deployed currently (April 2013) on the New Museums site to bypass legacy infrastructure that is dependent upon the Arup building. This will be used primarily for CUDN connections.

Design details for optical fibre and copper network cabling have been submitted for the Roger Needham building refurbishment.

Douglas House, The Law Faculty, Madingley Hall, Roger Needham building and the University Library have been surveyed for additional Lapwing wireless coverage. Churchill College is being surveyed at present March/April 2013)

Madingley Hall has several Lapwing access points on loan for trials of leaky feeder technology to allow better coverage of conference accommodation. This has demonstrated proof of principle.

Telecoms

The majority of time has been spent with the mobile migration to O2. The Service has been working especially hard to not only provide the normal Telecoms Helpdesk service, but also all the work for the O2 migrations & roadshows.

Spurred on by the O2 migration process, institutions have cancelled approximately 10% of the mobile contracts the University had with Vodafone.

After all the roadshows, approximately 70% of the 1,500 SIMs are left over. The Service now has to chase up all the institutions to find out what they want to do with these phones.

Once the main migration process has been completed, work will start on mopping up the stragglers; People away, dongles, etc. This process could go on for some months. The aim is to get these finished before the move to West Cambridge.

The new Virgin contract is close to being signed.

Institution Strategy & Media Services

Members of the Institution Strategy team have assisted with seven IT support staff recruitments in Departments and Colleges, while also attending a wide range of institutional computing
committees along with the College IT Management Group and its annual Oxford and Cambridge College IT Conference. The team has also coordinated meetings of colleagues from across the University to discuss Security Awareness Training, the recent Information Commissioner's Office ruling against the University and IT considerations related to sharing access to research equipment. A review of IT in a department is in progress, with a college exercise in planning.

In preparation for the co-location of the UCS and MISD in the Roger Needham Building (RNB), the team have helped organize two open days for staff at the RNB and assisted with the production of a 'Needham News' newsletter.

The Photography and Illustration Service (P&IS) hosted another successful exhibition in the Double Exposure series: 'The Dream of Somewhere' showing photos by Christian R. Brems. The exhibition was opened by the Danish Ambassador, Anne Hedensted Steffensen. The Graduation Services team, which P&IS manage, provided photographic services to graduands, their friends and families in the Senate House, on its lawn and in the Combination Room at the monthly degree ceremonies.

The Web Conferencing & Collaboration project along with the DS-Connect service based around Adobe Connect continues to develop and has been utilised by a steadily growing number of institutions. The pilot user group includes: Personal and Professional Development, Institute of Astronomy, Institute of Continuing Education, Careers Service, Cambridge Programme for Sustainability Leadership, Sociology Doctoral Training Centre (Statistics), Law, Theological Federation, Archaeology and Anthropology, Clinical Medicine, REF Symplectic training, CUFS Finance training, Materials Science, and an increasing number of conferences. A Master of Studies programme has enabled widely-separated participants to regularly engage in seminars as well as smaller study groups, while a panel discussion hosted in Cambridge included remote presenters and large numbers of participants, with live, rapid subtitling in English and experimental rapid translation into Spanish, Portuguese, Japanese and Korean.

S. Kearsey
9 May 2013