Computing Services Annual Report 2009/10

Thank you for taking the time to read this year's annual report. This has been another busy year as the team continues to manage the underpinning technology that helps the University deliver its goals.

We have started work on formalising our services with the publication of a service level agreement and we have also launched the new CompuForum to provide a focal point for user engagement and feedback. We will continue to improve our service and the way we deliver over the next year.

Finally, I was delighted that the team's hard work and dedication was recognised at the THE Leadership and Management Awards when we won the Outstanding ICT Team award. This was a reflection on both the breadth of projects as well as innovation delivered.

I am proud to be part of the Computing Services team, and I look forward to continuing to deliver the technology required to enable the University's strategic plans.

Ian Ellery, Head of Computing Services

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>2009/10
\Computing Services Statistics..

\..No. of  PCs:              4000
\..No. Of User Accounts:     Over 20,000 (active)
\..No. of Emails per week    4.8 million
\..No. of servers:           Over 300
\..Data stored:              Over 27TB
\..No. of teaching rooms:    243
\..No. of network points:    11200
\..Daily network traffic     990GB in/280GB out
\..Web hits per week         2.2 million pages
\..No. of  IT Orders         773
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AWARDS 2010
THE LEADERSHIP & MANAGEMENT
Outstanding ICT Team

Operational News

Windows 7 staff and students

Back in February work started on the new Windows 7 desktop image that all students will be using in 2010/11. Information was gathered about software usage; compatibility testing was done to determine that all the software would effectively work together, and by the summer an image was ready to rollout to the student PC rooms.

This Student Desktop change was slightly different from previous years in that all applications are now handled by App-V – a way of delivering software to the desktop without loading it all locally on the hard disk. This has many advantages, including the use of more cost-effective concurrent licences, increased targeting of software to only those who need it , and more efficient use of hardware resources.

By the time of publication, all student PC rooms will have been upgraded to Windows 7, and the rollout to staff will have commenced.

Disaster Recovery

During the past 12 months we have unfortunately had to initiate our formal disaster recovery (DR) processes several times. These processes are used when the scale or impact of an IT problem is significant, and the University's business processes are likely to be badly affected.

In June all power supplies to NHR failed, requiring us to completely shut down and then recover all our systems. In August and September we have had multiple problems with our virtualised server and Storage Area Network (SAN) environment.

However, because we have very well documented plans and processes which we can use when things go wrong, the recovery times in all cases were excellent. While we hope that our services always run smoothly, it is reassuring to know that if the worst happens, we have a well tested DR plan. Departments should also make sure they have business continuity plans to ensure they can keep operating in all eventualities.

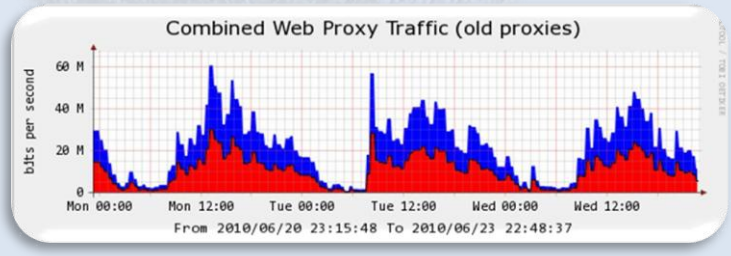
Business Continuity:
the processes invoked by an organisation to continue with limited or no IT service during disaster recovery.

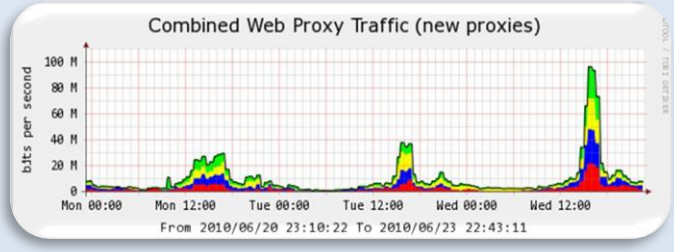
Disaster Recovery:
the act of recovering and restoring IT systems that have been lost due to an incident.

Computing Services Not Caught Offside by World Cup

The World Cup Matches back in June caused a significant spike in network traffic as many staff watched it at their desks on their PC.

However, the network team had anticipated this and installed additional (virtual) web proxy servers - the graph below left -which were just handling video traffic from the major websites - YouTube, BBC, ITV etc. So despite video streaming traffic levels at 3-4 times normal on Wednesday afternoon for the England/Slovenia match, standard web access was unaffected and normal work could continue. This was a simple "behind the scenes" piece of work, which will have been un-noticed by anyone - apart from the fact everything continued to work!

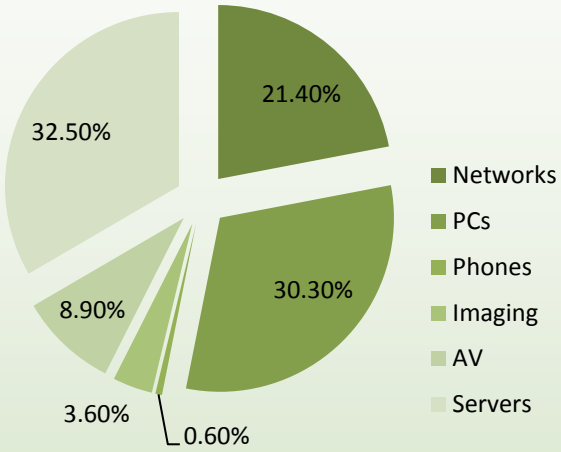




Green IT

…..In 2009 Computing Services carried out an assessment of the Carbon Footprint of Information and Communication Technology used at Canterbury Christ Church University.

Increasingly many organisations are facing external pressures to take more responsibility for the environmental impact of the services they provide and the resources that they use. Changes in government legislation, to encourage large organisations to take greater responsibility for the environmental impacts of the services they provide, resources they use and waste has reached the Higher Education Sector.



IT accounts for 33% of electricity used at CCCU

The UK government has a long term target of an 80% reduction. In January 2010 HEFCE released the *Carbon Reduction Target and Strategy for Higher Education in England* report, which contains a target of a reduction of 34% of carbon emissions by 2020 within the sector (HEFCE 62010).

The above graph shows the percentage energy consumption over a year for each type of ICT equipment within CCCU.

- In almost all cases staff and student PCs are shut down automatically after a given period of idle activity and are also shut down over night.
- The annual cost of supplying energy to the ICT systems at CCCU is £196,754 and this equates to 33% of the total cost of supplying energy to the institution.
- At CCCU 1,329,441 kg of CO_2 emissions are produced per year as a result of ICT use, which equates to approximately 34% of the total CO_2 emissions produced by the university as a whole.

To reduce the Carbon Dioxide emissions from the ICT systems at CCCU, improvements can be made to the way in which the services are provided by the department. The Computing Services Department has embarked on a project to change the way in which data is stored and the desktop services are provided to the user. The Virtualisation project will change the way in which the software on their desktop PC is provided to them. All data is stored on a central server and the user operates a *Thin Client PC* which uses significantly less energy than a conventional PC.

The 'Pull Printing' project of last year has also made resulted in significant reductions in wasted paper from unwanted printed pages.

Upcoming Projects

University Data Centre

Construction work has been completed on the new data centre in Rochester House. The design and build was completed by Keysource, who specialise in building data centres.

The data centre will use ambient air in order to cool the computer equipment. This means that additional air cooling will not be required for most of the year which will save electricity and help the University meet sustainability targets. Hot air will be sucked out from the computer racks, and the cooler, filtered air from outside will be re-circulated.

The migration of servers into the data centre is dependent on the existing EDF electricity supply being upgraded, with planned completion in November 2010. Once this work has been completed, some of the existing equipment will be transferred to the new room. We will also retain some computer equipment in the existing data centre on North Holmes Road. The dark fibre ring will ensure that we will have built in resilience for servers and storage. This means that should a problem affect either building, the impact to staff and students will be minimal.

Completion of Construction Work

St Georges

The technical design work has started on the St Georges site. In addition to student accommodation, it is proposed that the St Georges development will house a Student Centre facility.

Video Conferencing & Collaboration

Wimba
people teach people

There is currently a project investigating a video conferencing collaboration suite called Wimba. The pilot users include staff and students in support and academic areas and the project is being run in conjunction with LTEU.

The University has purchased the WIMBA Collaboration Suite, initially with a 2 year licence. The Suite includes: a desktop video conferencing tool and virtual classroom (Classroom), an instant messaging client (Pronto) and a learning object creating tool (Create).

During this initial year we will identify best practice, training and support needs, maintenance and resourcing implications. This will enable CS and LTEU to be able to support a wider, sustainable roll out of the Suite in year two of the project and beyond.

In year two it is hoped that the Suite can be used by an increased number of groups and individuals (who may be dependent on the technology) to aid further investigations of the tools, and to begin the roll out process of making the Suite available to all staff who require it in the future.

St Gregory's

The new St Gregory's Centre for Music is due to be completed in June 2012. The main auditorium and lighting aspects will be outsourced to a third party supplier, although close liaison will be needed with Computing Services.

The build will also include 5 music teaching therapy/teaching rooms which will each be fitted out with AV facilities and digital signage in the foyer areas.

A ticketing project will also be run in conjunction with the St Gregory's build. The main focus of the ticketing project will be St Gregory's, but it is anticipated that it can also be used for all other University events.

Completed Projects

iBorrow
laptop borrowing scheme

Building upon their work on Virtualisation Technologies, there was close co-operation between all CS teams for the effective delivery of the award-winning i-Borrow project in Augustine House. This enables users to access their files and the Internet in a robust and flexible manner and enhancing the learning experience with the provision of 200 wireless Netbooks.

ucisa
Award for Excellence
Winner 2009

AMID/Broadstairs Media Lab

The Development team are continuing with the integration of Apple Macs into the University's IT infrastructure. We have made significant inroads into facilitating software deployment and user sign-on in a simplified and cohesive way thus enhancing the users' experience and facilitating support.

Domain Migration Project

In 2010 the Domain Migration Project managed the complete move of all University systems from the existing '*cc.local.*' domain to a new globally accepted domain '*ccad.canterbury.ac.uk*.' '*ccad*' (Christ Church Active Directory). This was a large and complex migration affecting all PC's, servers, systems and services.

The need to change the way our systems and infrastructure were previously configured from a private '*local*' setup to a setup that complies with global DNS (Domain Name Services), had arisen due to a change in the user demand for more flexible, collaborative, web-enabled ways to access systems and data.

The change has made it easier to introduce new systems in the future that up until now have been difficult or impossible to implement An example of such a system is a University video conferencing and collaboration solution - Wimba.

Our existing domain situation had already been causing problems for the University. For example, in order for CCCU to collaborate with the Universities at Medway, the other partners organisations have had to agree to 'subvert' their valid global DNS systems to accept '*cc.local*.' as a valid DNS zone.

Microsoft® Application Virtualisation

App-V is the single most important project managed by the Development team. This allows the expansion of software application delivery by the use of Virtualisation technologies. In particular the increased use of Microsoft's App-V, reduces the need for software to be installed locally and its consequential disruption to clients whilst at the same time facilitating the deployment of new software and improving the management of software licensing.

Over 149 software application "packages" are now available for delivery in this way, with a total of 547 separate applications available as icons on users' PCs.

Windows Server® Active Directory

Completed Projects

VoIP

Voice over Internet Protocol

A new area in which Computing Services has been involved over the last year is VoIP (Voice over Internet Protocol). We have now installed over 200 handsets in Tenison, Rochester House and parts of Laud. We have also recently completed developing and installing a call queuing system for the i-zone which monitors all calls received by them, including those waiting and those lost.

VoIP is the routing of voice calls over the Internet or through any other IP-based network. VoIP is usually used because it is cheaper and has more functions compared to traditional land based telephony services. In general, phone service via VoIP is free or costs less than similar services from traditional sources with the same quality results. It can perform tasks that may be more difficult to achieve using traditional phone networks like routing calls to a user's VoIP phone regardless of where the user is connected to the network. VoIP also allows users to travel anywhere in the world and still make and receive phone calls – a feature we hope to introduce over the next 12 months.

Secure Passwords

The University data and systems are important to all of us. Remember, that data includes your payroll and personal information as well University financial and sensitive information. Secure passwords help towards protecting these.

Serious hackers use programs to break passwords, some of the easiest for them to break are words found in a dictionary of any language.

Back in February this year we went through the pain barrier of switching from regular to "secure" passwords to comply with an Audit request. Technically, the change went very smoothly but complications around remote users and the culture change meant that the i-zone was kept very busy during this time. At least we can rest assured that our personal computers are now protected as feasibly as possible from unauthorised access.

A secure password is one that cannot easily be guessed. It is made up of a combination of length, complexity and randomness.

Examples of *non-secure* passwords are family names, dates of birth, pet names, car registration – these are passwords that someone who knows you might try.

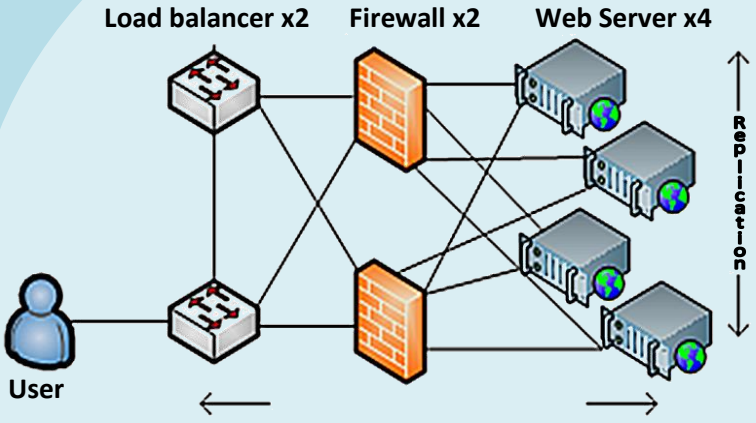
University Web Farm

The high availability web farm is a collection of computers which provide failure protection which significantly reduces the risk of total service loss.

There are three main parts to the web farm: computers which manage/distribute load; computers which protect the web servers from attack in the form of firewalls; and the web servers themselves.

An example of the resilience of the system is that we could carry out maintenance and lose 3 of the web servers and still comfortably maintain our web presence running on one web server. Another example is we could lose one load balancer, 1 firewall and 3 web servers and still maintain our web presence.

In addition the system is highly scalable allowing us to add additional nodes to the topology without disruption.



High availability / resilient configuration

Completed Projects

ResNET
Halls of Residence Network

In January, Computing Services made some improvements to the way students were able to log onto the Residential Network (ResNET) from their study bedrooms.

The improvements included the registering of the device – usually a laptop - by MAC address rather than by username which, along with a simpler registration process, has made attaching to the network much quicker and more straightforward than before for students.

What is a MAC address?

Every piece of network hardware PC, printer scanner, netbook, etc - has a unique identifying number that is placed there by the manufacturer. It is based upon a set standard that all manufacturers have agreed upon, and no two MAC, or Media Access Control addresses, are alike.

Bb

[illegible]

New Service Initiatives

Service Catalogue and Service Level Agreements

As is standard IT Good Practice, Computing Services have developed a Service Catalogue. This contains all IT Services that we provide and what support we are able to provide for that service. Any new service that is introduced or discontinued is added or taken off the catalogue as appropriate and provides a transparent indication of what we able or unable to do given the resources we have, and is therefore a continually developing, organic document.

We will always aim to restore any service as quickly as possible and will respond to all faults reported to minimise impact on University business. However we will respond based on a priority matrix, which links to agreed service levels set by the i-zone. The matrix is based on a combination of the impact and urgency of any fault and is specified on the catalogue. The catalogue can be seen on our website:

www.canterbury.ac.uk/computing-services

Assistive Technology

We undertook a review of the system for providing staff with disabilities or specific health issues with assistance. A new and more comprehensive process was needed to handle the purchasing, installation and training of staff in the use of assistive equipment. Computing Services staff worked in partnership with the Equality & Diversity and Human Resource departments to deliver the improved service.

More than 30 staff members have been assisted through the new process over the past 12 months, with 9 staff following the Access to Work route.

Any member of staff who identifies a need for Assistive Technology should, in the first instance, consult with their manager and the HR department.

CompuFORUM

Computing Services has run four forums since December 2009.

In the words of the mission statement, its aim is

"…to build a community of Computing Services Users to share experiences, network with peers and to engage in the formulation of Computing Services policy and services"

Hopefully we have gone some way to achieving this and from our point of view we are very pleased with the effort both academic and support have made to attend the meetings and offer feedback.

We also realise that the forum is an organic entity requiring input on both sides to make it work, and a constant nurturing to hone it into something the customers of Computing services find productive and worthwhile.

Three major objectives:

1. *To provide an opportunity for Computing Services to educate and inform the User community about policies and future developments.*

2. *To provide a focal point for feedback into Computing Services policy and service provision.*

3. *To provide feedback to the Head of Computing Services and Computing Services Management Team on issues to be addressed in the formulation of Computing Services policy.*

Buildings: Old and New

North Holmes Road/Laud Re-development

The refurbished former library building was handed over in late September 2009. By mid October, twelve bookable teaching rooms had been set up with AV facilities. Open access IT rooms for staff and students were also provided as part of this project. The NHR scheme also included the moves of the Wye laboratories into the first floor of Laud (the former Curriculum Resources area), and the relocation of the User Technology group.

The gym re-development started at the beginning of July 2009. The IT network infrastructure and equipment was upgraded in order to support the change of use by Sports Science.

Rochester House

In December 2009, 136 staff moved into the refurbished Rochester House building (formerly known as Rutland House).

From a Computing Services point of view, this meant providing PCs and printing facilities for all staff, and the IT infrastructure to support them.

In addition to the staff facilities, AV facilities have provided four meeting rooms on the first floor. One of these rooms is an IT training suite, with 20 PCs. Power and data has been put in place in further meeting rooms, should AV facilities be required in the future.

In addition, Voice over Internet Protocol (VoIP) telephony was introduced throughout the building. This was an expansion of the system in Tenison.

Rochester House was also added to the dark fibre network ring as part of the refurbishment.

University Centre Folkestone

In October 2009, it was announced that the University of Greenwich had decided that it was unable to continue its involvement in the University Centre Folkestone (UCF).

As the IT network and equipment were jointly purchased and ran systems for both UCF and Greenwich, it was necessary to undertake some re-configuration work, as well as upgrading equipment that was no longer fit for purpose.

The transition took place during the last week in July, and the first week in August this year. As there are still approximately 20 Greenwich students left at UCF, it has been necessary to provide them with CCCU computer accounts so that they can access the re-configured systems, and continue their studies.

Augustine House

In September 2009, Augustine House opened its doors to staff and students. The preparation for this was a major undertaking for computing services and the IT services we provided includes:

- 200 I-borrow laptops
- 148 Open access PCs
- 30 Library OPAC machines
- Augustine Hall Flat Floor Space
- Smartboards / promethean boards
- Connection to the dark fibre ring
- 9 Student / 6 staff MFDs (Multi-functional devices)
- 10 Mobile AV units throughout the building
- 7 Group study rooms with AV facilities
- 3 Staff meeting rooms with AV facilities
- 169 Staff PCs
- Wireless throughout the building

Moving Out

As a result of the work going on, a large number of internal moves were necessary in order to clear the areas being developed. These moves included detailed projects such as the temporary i-Zone and library, as well as individual office moves.

Along with Estates, Computing Services also managed the decommissioning of IT equipment and the moving of staff from **Neville House, Newingate House** and the **Teach First** offices in London.

Computers for Charity

In the past year Computing services have begun donating older PCs that are no longer required to 'Computers for Charities'. So far the department has donated approximately 400 PCs that have been reconditioned and put to further use in schools and community projects around the world. This initiative was started when we realised we were disposing of serviceable PCs that while past their best, were still in working order and perfectly capable of running the older operating system Windows XP. So far, computers for charities have confirmed a batch of ex-CCCU PCs have been sent as far away as Zimbabwe where they were put to good use providing IT equipment for schools programs. Further information is available at www.computersforcharities.org

WEEE, the Waste Electronic and Electrical Equipment directive, is a green European law that came into force in 2007 to clean up the infamously dirty technology industry. It has meant that all equipment manufacturers in Europe are forced to take back and recycle their old equipment rather than just let consumers dump them. However, authorised agencies such as Computers for Charities can take the equipment and dispose or recycle it.

KentMAN

Computing Services runs the Kentish MAN (metropolitan area network) on behalf of the higher and further education community in Kent. The network connects all of the major colleges and universities in Kent to each other and to the internet. It also provides connectivity for schools, libraries, and local government, so in total, an estimated 400,000 people depend on the network. Over the last year, the core of the network has been upgraded to 10Gbps.

This would provide sufficient capacity to support around 800,000 domestic broadband connections. Canterbury Christ Church University has 1Gbps connections to the Kentish MAN at Canterbury and Medway, and 100Mbps connections at Broadstairs, Folkestone and Salomons. Every time you send an external email or use the World Wide Web, you are using the Kentish MAN network supported by Computing Services.

Conferences

Conference Accounts created 2009/2010

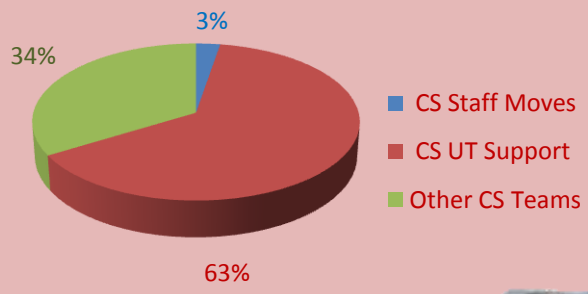
Month	Conferences	Conference Accounts
Aug-09	1	12
Sep-09	6	164
Oct-09	8	134
Nov-09	10	166
Dec-09	2	40
Jan-10	6	142
Feb-10	8	172
Mar-10	8	164
Apr-10	3	814
May-10	5	91
Jun-10	9	167
Jul-10	9	215
TOTALS	**75**	**2281**

Hardware Support

Teaching Room Upgrades

Canterbury	
Erasmus	7
Hall Place	11
Newton	2
Ramsey	13
Sidney Cooper	1
Somerville	3
St Pauls	3
Medway	
Rowan Williams	10
Salomons	
Mansion House	8
Lecture Theatres	
Old Sessions	Og32

Sunrise Calls Breakdown



User Technology Support

As a result of the University's continued growth and Estates development programme the Support team have had a very busy year. It involved in excess of 300 staff office moves across several new and refurbished buildings.

Staff and student support calls exceeded 1,000 per month for the first time this year, ranging from simple log-on issues through to complex multi-site project work.

During the year, 58 teaching rooms and 1 lecture theatre had audio-visual and PC upgrades, providing both Staff and Students with improvements to the teaching facilities including the installation of High-Definition data projectors, Dolby sound systems, "Blu-Ray" DVD players and Visualisers.

Over 90% of all teaching rooms now have a full, fixed audio-visual system with AMX/ProCon control. This enables not only push-button ease of use for lecturers, but also remote monitoring and power control; enabling Computing Services to reduce the University's energy consumption and increasing the life of AV consumables.

Multi-Functional Devices

During the course of the year, in parallel with the introduction of Smart Cards for Staff and Students and the development of Augustine House, Computing Services introduced the use of Multi-Functional Devices, or MFDs.

The use of MFDs is in line with the University's Printing Strategy; both facilitating printing, scanning and copying facilities as well as working towards a more environmentally friendly solution that complies with our energy consumption reduction targets for 2020 and reduces our Carbon footprint.

The success of the secure printing system trial in Augustine House will lead to a more generalised roll-out of the system over the next few years in accordance with a full Printer Management Review during 2010/11.

Computer Lab Upgrades

User Technology Support continued its programme of IT replacement during the year and has replaced the 5-year-old PCs in 22 Computing Labs:

Canterbury
Anselm
Erasmus
Hall Place
Johnson
St Pauls
Ramsey

Medway
Rowan Williams

Salomons
Tech Suite
Forge Suite
Mansion House Library
Internet Café
Runcie Court Library
Interview Suite
Runcie Stalls

....and Finally

AWARDS 2010
THE LEADERSHIP & MANAGEMENT
Outstanding ICT Team

> *"The panel were particularly impressed with the range and size of projects undertaken as well as the innovation brought about"*

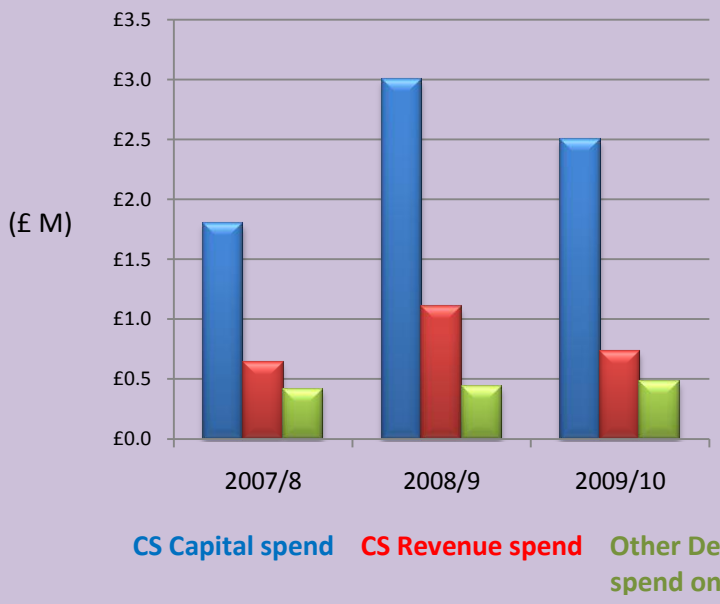
In June 2010 Computing Services were the proud recipients of The Outstanding ICT Team Award from the Times Higher Education Leadership and Management Awards.

In the words of the judges: "good, fast and cheap. It is often said that projects can be only two of three, but the team from Canterbury Christ Church University have bucked the trend by delivering all of them in their developments during the past academic year."

The award was recognition of the work put in by the department for infrastructure projects that are helping to bring Christ Church's technology up-to-date. As you can see from previous pages in this report, the work is far from over and rest assured Computing Services will not be resting on its laurels.

Chris Cobb, pro vice-chancellor at Roehampton University and one of the judges, said: "This was an intensive year's work for the team. The panel were particularly impressed with the range and size of projects undertaken as well as the innovation brought about."

Finance Overview



Storage Space Usage