

Annual Report 2011/12

IT Work Plan 2012/13

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1 Overview of the Area

1.1 Structure & Function

IS Services is responsible for the planning, delivery and support of the College's main computing facilities. This includes the College's network systems, web infrastructure, email and calendaring, management information systems, student computing facilities, some research infrastructure and High Performance Computing. IS Services also provides support for teaching and learning in a number of lecture theatres and seminar rooms on and off campus, and also provides a video capture/production service and a photographic service.

Staff and students are provided with full IT support via the IT Service Desk and a wide range of IT training is also available either online or face to face. IS Services also runs a Programme Management Office (PMO) for all IT projects in line with College Board policy and provides significant support to the College's enabling Strategy (e-Strategy). The department supports 25,000 users on the main campus and on 26 remote sites. An IS Services organogram is included as [Appendix A](#)

1.2 Staffing and Locations

The current (2011/12) staffing complement amounts to 77 fulltime equivalents (FTEs). Of these, 79.1% are on administrative grades (programmers, database administrators, network administrators, business and systems analysts, systems administrators, supervisory, middle and senior managers), 2.3% are on executive officer grades, 15.1% are on technical grades and 3.5% are research staff. In June 2011, the Centre for High Performance Computing was merged with IS Services.

The department is spread over four buildings. The largest number of staff is housed in 200 Pearse Street which also houses the College's main Data Centre. The Support Service and Helpdesk is based on the ground floor of Aras an Phiarsaigh and the Audio and Visual and Media Services has floor space on the third and fourth floor of the Arts Building. The recently integrated High Performance Computing team work from the Lloyd Building. These buildings are geographically dispersed and this makes the optimum running of the department and the sharing of knowledge difficult. It is also confusing for end-users.

IS Services operates a number of computing labs for student and academic use on the main campus and on remote sites. The space allocation to IS Services is 1573.44MSq. Most of this space is on campus. However, this allocation includes over 150 data communication rooms which include a number on 26 remote sites including major buildings at St. James and Tallaght hospitals; the new Biomedical Sciences building on Pearse Street; and 20 Student Computing facilities providing over 1,000 student computers on campus and five off campus locations.

1.3 Budgetary Information

Like all areas in College there has been significant budget reductions in IS Services over the past number of years as shown in Table 1 and graph 1 below. In 2011/12 IS Services committed to funding €200,000 towards the operational costs of the High Performance Computing and Research Unit as part of the integration of the unit into IS Services in late 2011. IS Services also funded the costs associated with the move to a new e-Learning platform, Blackboard Learn. Both these projects were funded from the existing IS Services non-pay budget with no extra cost to College. This was achieved by making savings in other areas of technology expenditure and securing better deals with key suppliers.

Table 1

Year	Non Pay	Pay	Total Expenditure*	Reduction	% Reduction
2007/08	2,681,926	5,842,000	8,643,926		
2008/09	2,356,686	5,747,000	8,103,686	540,240	6.30%
2009/10	2,547,445	5,136,000	7,683,445	420,241	5.20%
2010/11	2,369,354	4,852,492	7,221,846	461,599	6%
2011/12	2,067,791	4,443,423	6,511,214	710,032	10%

Graph 1

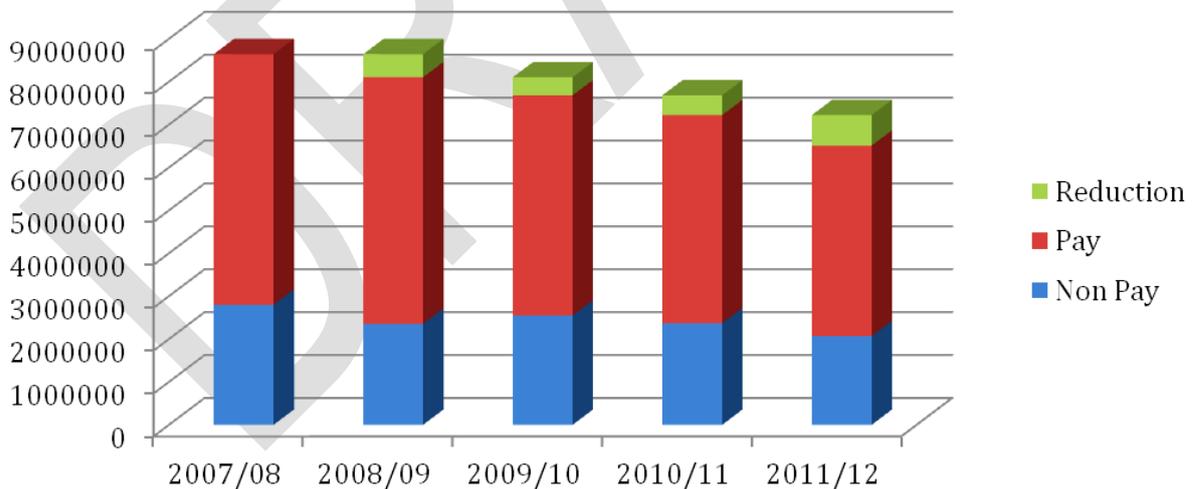
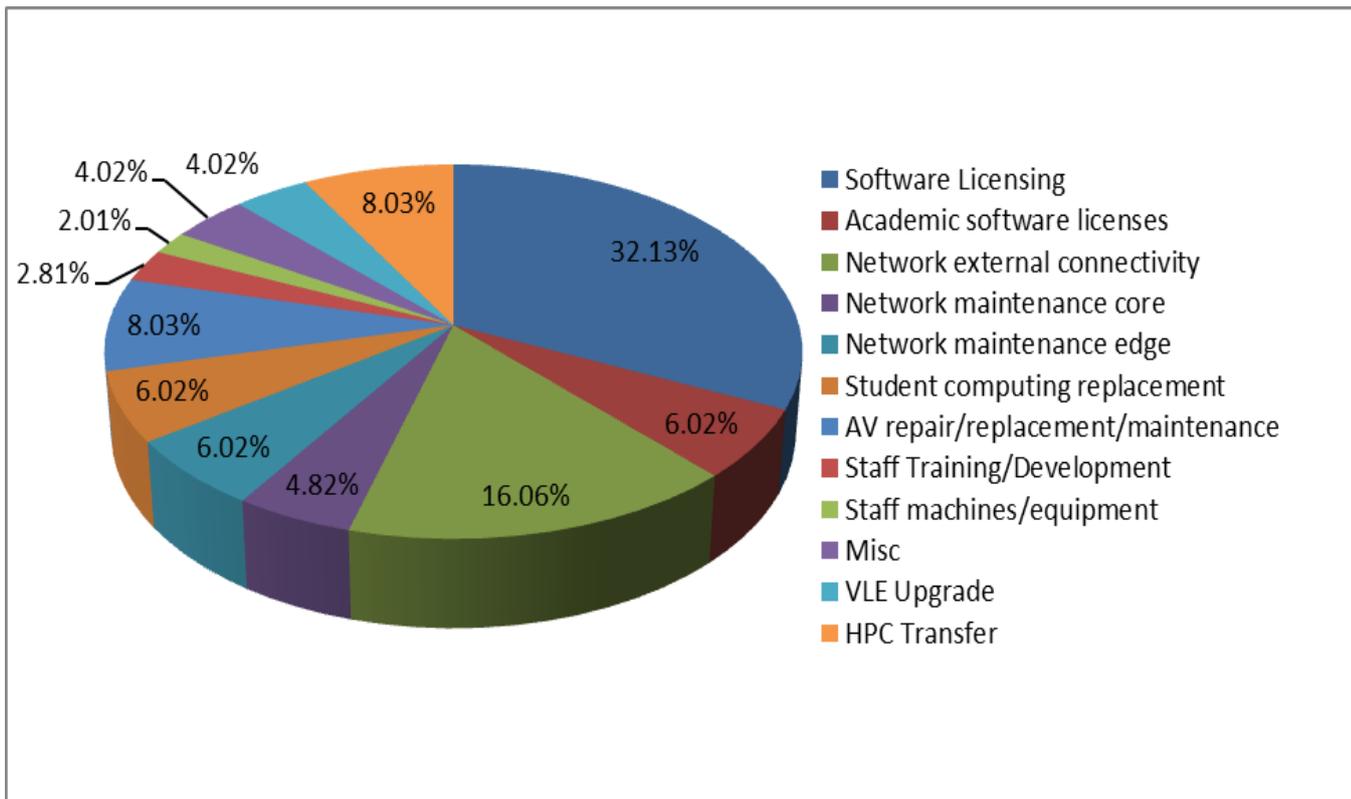


Chart 1 - Breakdown of non-pay budget 2011/12



1.4 Key initiatives 2011-12

During the year the department contributed to the START initiative, took part in an external Quality Review (May 2012) and working with the School of Computer Science and Statistics undertook a major survey of the IS Services user base (March/April 2012). It was the largest survey ever conducted by the department and a summary of some of the key results are included as [Appendix B](#).

The Quality Review not only looked at IT services provided by IS Services but also commented on IT services provided outside of IS Services. A number of recommendations (35) were made by the four external reviewers, on IT service provision in College, 17 of which were specific to IS Services and 18 that applied to other IT service providers. The full report is available at

<http://www.tcd.ie/vpcao/quality/assets/pdf/Reviewers%20report%20for%20IS%20Services%20-%20web.pdf> and the implementation plan for these recommendations is being brought to Board in Jan 2013.

The START presentation given by the Director of IS Services to the START task force is available at <https://www.tcd.ie/local/start/presentations/>

As well as performing operational and support duties, IS Services staff were also heavily involved in the support of the College's e-Strategy programme of work and a number of other IT projects.

A number of key projects commenced, were completed or were on-going during 2011/12. Some of the key highlights were the successful delivery of a new IT infrastructure to support the GeneSIS project, the completion on time and in budget of a new Green Data Centre, the delivery of a new e-Learning platform again on time and in budget, and the completion of the Research Proposal and Awards Management System (RPAMS).

Working with College Procurement IS Services tendered for and selected a vendor to provide new compute, storage, networking, backup and management tools for TCDs new Green Data centre. This will replace end of life and legacy equipment. It will provide an enterprise class facility to support the infrastructure as a service model to deliver processing power and storage to meet TCD's diverse user requirements. The deal offers the latest technology at significantly discounted prices and positions the College and IS Services at the leading edge of storage and compute solutions. It will also position the College for the use of private, public and hybrid cloud solutions, as well as delivering high scalable storage solutions.

Services will be rolled out from this new infrastructure in 2013. The cost of this project was funded by savings made in the IS Services non-pay budget in 2010/11 and 2011/12 when technology purchases were deferred to achieve the optimum solution, which future proofs the College investment in this area for a number of years of come. There was no additional capital or operational costs associated with this project.

During the year, IS Services established a new continuous improvement initiative and processes. The objectives of this initiative are to achieve higher levels of user satisfaction and lower levels of support activity for the department by a) identifying, targeting and improve existing services, b) identifying and delivering new enhanced services on top of existing services. The services selected for improvement are chosen from monthly helpdesk statistics; direct feedback from the IS Services Users Group; and direct feedback to the department from staff and students. Some examples of service improvement include modification to the wireless infrastructure to increase traffic throughput; roll out of additional wireless access points to areas with no coverage and to over-subscribed zones (e.g. the Hamilton library); increased stability and reduced connection complexity in the TCD Network Access Control service; delivery of a single password management page for students; removal of 6 month password expiry for student network login accounts; modifications to network security rules to provide greater access to external resources; and rollout of staff and student wireless mobile phone device service.

For the coming year, the department plans to identify and publish a list of services for improvement each quarter. Examples of services targeted for additional improvement next year include a new PC to Desktop service, whereby all configuration and setup of a new Windows based PC/Laptop will be handled by IS Services and its agents; rollout of wireless connectivity for a wide range of mobile

and handheld devices for staff and students; a new self-service facility to allow students to reset a forgotten password.

IS Services senior management also served on a number of committees including the Library and Information Policy Committee, The Research Committee, The Graduates Studies Committee and the Web Management Committee; and are also involved on the Project Boards of the GeneSIS, Financial Information System, Enterprise Architecture & HR work-streams (e-Strategy Programme).

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2 Teaching and Learning IT

2.1 Virtual Learning Environment

The main teaching and learning IT project in 2011-12 was the move of the Virtual Learning Environment (VLE) from an outdated and cumbersome platform (Web-CT) to a new platform, Blackboard Learn. The project involved the migration of existing Web-CT users and Moodle users to the new platform. The new service is now hosted by Blackboard in Amsterdam. The project brought increased functionality, improved performance and was completed on time and in budget. IS Services staff worked closely with staff from the Centre for Learning Technology (CLT) on this project.

2.2 Computer Upgrades in student computing rooms

The computers in the 24 hour access rooms in the Hamilton and Ussher were replaced in summer 2012. Also included in the summer upgrades were the computers in Arts Building room 4066, The Panoz Institute room EE4 and the 1937 Reading Room (lower computer room)

2.3 Student Printing Services

During the summer 2012 a tender was released to provide a combined copying and printing solution for students in College. The tender encompassed printing services in the central IS Services student computer rooms, copying and printing services in the Libraries and copying services provided by Facilities. The three College areas worked in conjunction with College Procurement to specify and select a new service provider and the new service was implemented for the start of the academic year.

2.4 Software Portfolio Updates

The software portfolio of the student computer room workstations has been refreshed in consultation with Academic staff across College and all the workstations are now running the updated versions of the required academic software. The Mac computers are running on Mac OS 10.7 and the PCs are running the Windows 7 operating system.

2.5 Software Licence Upgrade

ArcGIS, geographical software on site licence at College, released new licencing functionality to allow users to take the software off campus for use on field trips. This feature has been implemented on the College software licence service as a self-service utility for all College users.

2.6 Student computing labs system management tools

New system management tools have been employed for Windows workstations:

- all computers have new security software (Deep-Freeze) that on reboot of a workstation will ensure the system returns to a known good working state thereby improving reliability and performance

- to allow reduced logon time in the Lecture Theatres and Seminar rooms, software (Igloo) ensures that the user's profile will remain on the computer enhancing the user experience by improving performance

New system management tools have also been employed for Mac Workstations:

- all computers have new security software (Deep-Freeze) that on reboot of a workstation will ensure the system returns to a known good working state.
- new software is used for the deployment of Mac workstation images to the computer rooms. This software (Deploy Studio) has reduced the time required to image a workstation and allows a single image to be deployed to a Mac remotely.
- New management software (Munki) for deploying updates to the image is also now use. A new configuration management software application (Puppet) for the management of computer profiles was also implemented.

2.7 Access to College Podcasts

Access to College podcasts which were only available on the internal podcast server, was extended in 2011/2012 to become accessible from any computer with internet access. Prior to this upgrade this service was only available when connected to the College network. On completion of the upgrade end users outside of the College network, but with College IT account details simply authenticate using their College username and network login password to download College Podcast content.

2.8 Audio Visual Equipment replacement and upgrades

A number of upgrades to Lecture Theatres and Seminar Rooms were completed across Campus in 2012. The work undertaken Included full specification of new equipment and overseeing the installation into the rooms. One major change to the audio facilities was driven by the national Digital Switchover and all the wireless microphones across campus were replaced and upgraded. A summary of the work that has been completed is shown below in Table 2

Table 2

Lecture Theatres and Rooms	New Equipment Installations
The Edmund Burke Theatre	New projectors and preview monitors, PC and Mac
The MacNeill Theatre	New projectors and preview monitors, PC and Mac.
The Davis/Emmet/JM Synge Theatres	HDMI inputs added to installation
Arts Building Room 2026	New projector and screen
Arts Building Room 3074	Complete refit of room, new lectern, projector, PC, Mac and screen
The Museum Building Rooms M4,M20,M21	New projectors and screens
The Arts Building Rooms 3051,3071,3106,3126	New projectors and screens
The Goldsmith Hall	New lectern and upgrade of installation.
The School of Nursing Rooms 1.10, 1.24,1.26	New projectors and screens.
The following areas in College <ul style="list-style-type: none"> • Goldsmith Hall • The Panoz Institute • Hamilton Entrance • Arts Concourse • School of Nursing D'Olier St. • The Stone Building, St James • The Trinity Centre St James 	Digital Signage - new screens and computing equipment fitted in the noted locations

AV Consultancy was provided by IS Services to a range of Schools and departments including:

- Geography - Design of new AV facilities for Geography Lecture Theatre
- School of History - Design of new AV facilities for three seminar rooms
- School of Business Studies - Design of new AV facilities for a meeting room
- Mechanical Engineering - Design of upgraded AV facilities in Lecture Theatre and meeting room
- History of Art - Design of new AV facilities for new seminar room
- School of Medicine - Provided advice on upgrade of AV facilities in two Lecture Theatres in St James and Tallaght
- Zoology - Provided advice on upgrade of AV facilities in Lecture Theatre and upgrade of laboratory video equipment
- CLCS - Provided advice on upgrade of AV facilities in classrooms
- School of Pharmacy - Provided advice on improvements to existing video conference room

- Treasurer's Office - Provided advice on video conference facilities
- FIS project - Provided advice on projection facilities for a meeting room
- Global Relations - Provided advice on video equipment
- Naas Hospital - Provided advice on provision of video conferencing for TCD students located at this site.

2.9 Video Production

Video production and distribution is now experiencing increasing demand for Teaching and Learning purposes and the Audio Visual unit were involved in a number of productions. Four teaching videos were filmed and produced for the School of Biochemistry & Immunology, and the National Digital Learning Repository (NDLR)

- 1) Spectrophotometry
- 2) Solutions, dilutions and buffers
- 3) Oxidative phosphorylation
- 4) Protein purification by gel filtration and ion-exchange chromatography

The following gives a flavour of some the areas for which the video material has been filmed and the videos are now in editing and postproduction phases.

2.9.1 Video for Trinity College Dublin's National Institute for Intellectual Disability (NIID)

Video of students outlining the group's research and teaching activity, for use on their web site.

2.9.2 Biosafety Video, for TCD Safety, Health and Welfare

A biosafety video demonstrating the operation and safe use of Microbiological safety Cabinets, in particular, the new Containment Level 3 Laboratory in the Trinity Biomedical Sciences Institute.

2.9.3 A number of videos for The Careers Advisory Service

Video of students and recent graduates sharing stories of their interaction with the Careers Advisory Service, for use on their web site.

2.9.4 Video for the Department of Classics

Video of students, giving accounts of their experiences studying Classics in Trinity, for use on their web site.

2.9.5 Video for the Irish School of Ecumenics

Video of students, giving accounts of their experiences studying at The Irish School of Ecumenics, for use on their web site.

2.9.6 Video for the School of Religions and Theology

Video of students, giving accounts of their experiences studying at The School of Religions and Theology in Trinity, for use on their web site.

2.10 Audio Production

A number of requests were also received for audio support. Below is a sample of some of these requests.

- Restoration and digital mastering of archive audio recordings of Margaret Pearse (sister of Pádraig Pearse), the writer Brendan Behan and others. The recordings will be used as part of Trinity's involvement in the 1916 commemorations in 2016.
- Live recordings of material in various languages for language learning, research, examination and comprehension tests.
- Live recordings of collections of Poetry and Prose for the Oscar Wilde Centre.

2.11 Photography

- New and archive photographs supplied for the Trinity Undergraduate Prospectus publication for 2013.
- Major contribution to new book celebrating 300 years of the Old Library - "The Old Library Trinity College Dublin 1712—2012". Location photo shoots of the Long Room, both inside and out, were commissioned. New and restored images supplied for the current display on the Old Library.
- Support for History of Art in photographing and scanning manuscripts, documents and photographs. More than 1,000 prints produced and printed for the department's examination requirements.
- Coverage of Fresher's Week 2011.
- Studio Portraits for College departments including Education, History, Long Room Hub, Arts and Humanities, Economics, French and History of Art
- Photography of paintings and artworks, both in studio and on location, for the Curator of the College Art Collections. This work included the scanning and touching up of archive images on film or slide to create new digital files.
- New and archive images supplied to a wide variety of College and Administration Departments for teaching and external publications including:
 - Web Office, Communications Office, Secretary's Office, Microbiology, Alumni Office, History, Douglas Hyde Gallery, Law School, Irish Department and Accommodation.
- Coverage of Shakespeare Drama week - images shot and published.
- Student Group Photos produced for College departments including the Departments of Pharmacy, Economics, Statistics, the Alumni Office and Senior Sophisters
- The continual update of shots around the college for the archive.
- Trinity Yearly Photographic Competition – College Photographer provided printed images of entrants work, evaluated the entries and was a member of the judging panel.

2.12 Video Conferencing

The video conference suite in the Arts Building managed by IS Services hosted 74 Video Conferences over the Academic Year.

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3 Enhancing the User Experience

As part of our continuous service improvement ethos, IS Services is committed to providing new and improved services to the College community. Examples of some of the new or enhanced services provided in the last year are detailed below.

3.1 BYOD (Bring your own Device) Wi-Fi connectivity

In recognition of the emergence of mobile devices as important productivity tools for College users, IS Services announced a pilot service for staff that enabled certain mobile devices to connect to the College wireless network. This self-supported service allows staff to install an in-house developed app, submit a connection request and then install a mobile profile on their device which configures that device to connect to the College wireless network. Furthermore, changes were made at a network level to ensure that many popular mobile applications worked from the TCD Wi-Fi network.

The existing TCD Connect student service was extended to provide for connection of a selected range of mobile devices over the summer for postgraduate students who currently already have computer devices connected to the TCD Connect system.

3.2 Checkpoint Disk Encryption

A new Disk Encryption service for College-owned computers was launched. This service encrypts the computer's hard disk where the operating system, applications and data files are stored. This ensures that if a College computer is stolen or lost sensitive or confidential College data is still secure and cannot be accessed by third parties. IS Services can provision an audit trail confirming that the computer was 100% encrypted for the end user at the time it was stolen or lost.

3.3 Operating System & Software Support

IS Services released, (following extensive testing), the provision of support for staff and postgraduates wishing to connect and use 64-bit operating systems on the College teaching and research network. IS Services also introduced support for the new MAC version 2011 of Microsoft Office.

3.4 Upgrade to McAfee VirusScan 8.8 for Windows PC on College domain

IS Services completed an upgrade to McAfee VirusScan 8.8 for all Windows PCs connected to the College network in offices and labs and on the staff wireless network. This is the latest version of the McAfee Anti-Virus software, which offers the best protection possible against viruses and malware. Aligned to this is an upgrade of the reporting software, to the latest version, thus enhancing our endpoint protection of Windows PCs on the College network.

3.5 Improved Access to Remote Assistance

During 2012 IS Services introduced an improved solution for providing remote assistance to College users who contact the Helpdesk via phone. The new software allows Helpdesk staff to connect remotely to any computer with internet access, not just those connected to the College network. Additionally, Helpdesk staff can now take remote control of Apple Mac computers, helping to provide a much quicker resolution to most technical support queries for users of such devices.

As part of the improvements users of Windows PCs connected to the College network can now use the 'IS Services Remote Assistance' shortcut icon directly from their desktop.

3.6 Enhanced access to external internet resources to all areas in College

A large improvement was made to access to external internet resources over the last academic year. Users now only have to provide their username and password once, instead of having to authenticate multiple times, and then all internet services and applications requiring internet access will operate without further prompts for these details. It is also no longer necessary to configure individual applications with 'proxy' settings.

3.7 New Set Password Utility for Students

Students can now set their My-Zone password and network login password via a new webpage utility. This new page can be reached via the 'Set Password' link on the My-Zone 'sign in' page and also easier management of their TCD credentials.

3.8 Quality Customer Service Processes

As part of the College's Quality Customer Service Charter, a governance requirement of the Universities Act 1997 - we introduced an updated Customer Charter, a feedback system regarding the Helpdesk service and a formal complaint handling procedure. We aim to deliver excellent customer services and wish to continue to improve using these new processes and The IS Services customer charter is one of the main ways we hope to improve the experience customers have when they access services or information

3.9 Release of New My-Zone Features (Student email and applications)

IS Services released the following 10 new features for all College students using My-Zone:

- Google Latitude – a location-aware service, primarily for mobile users
- Google Chrome Sync - for those using the Chrome web browser on multiple computers
- Google Groups – a collaboration service including facilities such as mailing lists

- Google News – a computer-generated news site that aggregates headlines from news sources worldwide
- Google Reader – an easy way to keep up to date with new content on your favourite news sites and blogs
- Google Maps – a service offering powerful, user-friendly mapping technology and local business information
- Google Translate – an online language translation service instantly translates text and web pages
- AdSense – a feature that can integrate into users' own website and manage via their My-Zone account
- YouTube – students can use their My-Zone account to login to YouTube
- G: Drive – improved file-storage

3.10 Edugate Federated Access

IS Services announced additional services made available through Edugate federated access, meaning College users can gain access using their TCD login credentials. These services are as follows:

- HEAnet Media Hosting – allowing College users to upload, host and stream videos online
- NDLR D-Space – National Digital Learning Resources repository
- Microsoft Dream-Spark – free download of Microsoft developer and design tools

3.11 TCD Connect Support

IS Services announced a new range of anti-virus software supported during the registration and scanning process on the TCD-Connect service:

- Microsoft Security Essentials
- All versions of Kaspersky Anti-Virus
- Avast!

This broadens the range of supported anti-virus applications for those connecting to the TCD Connect service, whilst retaining the high security aspect of the service.

Mac OS X 10.8 (Mountain Lion) was introduced for support on TCD Connect service

3.12 New TCD Connect Clinic Room

IS Services relocated to a larger, more spacious Clinic room in 199 Pearse Street where Network Access Advisors assist students to connect their personal computers to the College Network. The new space can cater for larger groups of students than previously could be accommodated in the original clinic room in Aras an Phiarsaigh.

The User Communication Group (UCG) was formed in 2011/12 from the original Training and Publications team in IS Services. The group increased its focus on IS Services communication, both externally and internally, and also took on the new responsibility for an IT support services continual improvement program. Initial

improvements delivered included the management of monthly IS Services KPIs, <http://isservices.tcd.ie/general/performance.php> and the publication and management of the IS Services Service Catalogue.

In the area of Communication, the group completed a review of IS Services internal & external communication. The group has taken on the role of managing the IS Services Users' Group which reports into the Library & Information Policy Committee. This group meets three times over the academic year and provides cross-College representation of the views of the end user community. The group also manages and co-ordinates the IS Services Change Management process. The use of Twitter, blogging and ISS News and Alerts has been continuously developed and improved.

Work has begun on the delivery of online training courses to supplement the current classroom based courses. The range of courses delivered by the team was reviewed and each class room based course was reduced to a half day and enhanced by the use of podcasts and online material. A new training course was developed and delivered for the 'SharePoint' project. There has also been an increased focus on individual desk-side coaching and support and continual involvement on the delivery of IT Training for the Trinity Access Project.

3.13 Training Courses

Scheduled Courses

- 73 classroom based scheduled courses were delivered.
- 451 Staff booked to attend
- 484 Postgraduates booked to attend
- An additional 30 courses were delivered on request and were attended by 325 staff and postgraduates.

The most popular 3 courses were:

- 1) Planning Thesis Production
- 2) Data Processing using Excel
- 3) Maintaining College Websites

The overall satisfaction rating for these courses has been high with over 94% agreeing that their expectations had been met at the course attended.

Educational events have also been arranged with a number of College software suppliers including Mathworks for Matlab and Simulink, Adobe Creative Suite 6, Mathematica and SPSS Text Analysis roadshows. The group also engaged with Microsoft to promote the Study Smart scheme for students in College.

3.14 Induction 2011

The group delivered induction material for incoming students including classroom based sessions, lectures, web pages, podcasts, posters and booklets.

- Introductory lectures and classroom inductions were attended by over 1400 new students.
- Over 2200 new students received an Introduction to IS Services following the Library tours.
- 10,000 new student guide booklets were distributed

The UCG group continues to provide:

- On-going 2nd line IT support, consultation and analysis for relevant queries escalated from the Helpdesk.
- On-going development and review of IT support documentation and web pages for new and upgraded services

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4 High Performance Computing & Research IT

The High Performance and Research Computing unit manages a range of High Performance Computing infrastructure:

- Kelvin – a national High Performance Computing resource funded through Programme for Research in Third Level Institutions (PRTLTI) with 1200 cores
- Lonsdale – a College wide resource with 1232 cores
- Parsons – a private resource for 4 research groups with 1100 cores
- Crusher – on behalf of the computational chemistry group
- Stibbons – on behalf of Molecular Design Group
- BlueGene/P – 4096 cores of specialized compute

The group also manages the associated High Performance Computing storage infrastructure of approximately 200 Terabytes and infiniband networking. These systems have been used by 93 users from 12 schools leading to the publication of 17 peer-reviewed papers in the first half of 2012 (newer figures not available at time of writing).

4.1 Teaching and Training

In 2012, The High Performance and Research Computing group continued to be involved in providing both for credit teaching at postgraduate level and not-for-credit training courses. The unit provided the backbone of the School of Mathematics' MSc in High Performance Computing covering Parallel Programming, Computer Architecture, Software Engineering and Financial Mathematics courses as well as supervising students' research projects. The unit also provides an intensive week long course in Risk Quantification as part of the School of Business' MSc in Finance.

At various times during 2012 the unit also ran skills transfer training courses in parallel programming, software tools, CUDA programming and Linux to staff and students. These not-for-credit courses are always over-subscribed and the intention is to expand both the number of courses and their frequency in 2013.

4.2 Digital Humanities

Over the last few years, The High Performance and Research Computing unit has taken a more active role in supporting the Digital Humanities in College. In 2012, three major projects were launched in this area that are managed and hosted by the group – the Irish Chancery Letters launched by the Provost in May, the Mary Martin Diary launched by the Minister for the Arts Heritage and the Gaeltacht in October and the Library's Digital Collections recently launched by the Librarian.

The High Performance and Research Computing unit continues to lead TCD's involvement in the Digital Repository of Ireland where it leads the infrastructure strand with a fulltime team of four developers. The unit is also heavily involved in two new pilot projects in Digital Humanities that started in November, one featuring the work of Irish illustrators, the other a catalogue of Early English Church Music.

4.3 Data Management

In 2012, the team became involved in two new data management projects for the Memory Research Unit in TCIN and the Motor Neurone Research group in the School of Medicine. Along with existing projects with the Prostate Cancer Research Consortium, TCIN's MRI archive and the IMM, data management and long term storage have become key areas for the unit over the last few years. With the adoption of the Good Research Practices policy, this area will continue to grow over the next few years.

4.4 Research Activities

During the year the team has been active in its own research in High Performance Computing tools and systems. The group were invited to present at the annual SLURM¹ user meeting in Barcelona. We have also been in discussions with European partners and some commercial organizations on a research programme around digital preservation and long term storage using the Ceph platform.

HPRC also coordinated an application to the SFI equipment call in 2012 for a Research Cloud but that was not successful. The group were also shortlisted for an award from the Human Frontier Science Program in the field of computational genetics.

In 2012, the unit continued to host interns from HOWEST University in Belgium as part of their final year studies and from the University of Santiago de Compostela through the Leonardo Program. These students have contributed to projects in Physics, Engineering, Finance and the Library as well as the Digital Repository of Ireland.

¹ SLURM is open source software used in super computers across the world.

5 Sustaining the IT Infrastructure and Performance

Network Services supported enterprise wide data network service delivery to the College Community, guests and visitors during 2011/2 reporting period. In addition to operational activities such as fault and incident response, capacity management & delivery, multiple high end priority projects such as The GeneSIS, (new student administration system), Infrastructure as a Service (providing the infrastructure to enable private and public cloud computing solutions and scalable storage solutions); and the new Financial Information System (FIS) were supported. The following service supporting improvements are of particular note.

5.1 The Green Data Centre

This project was completed on time and in budget in 2012. This project used a bundled design, build and maintain procurement process to deliver a performance specification aligned to functional needs, College Green policy and organisational and community shared services aspirations.

The project outcomes exceeded expectations in terms of quality and costs within the anticipated schedule and was shortlisted by the 2012 Data Centre Dynamics Awards, EMEA region, in the final four “The Leadership in Public Service” category. The Green Data Centre is a key enabler to provide high quality IT services, reduce energy costs and allow consolidation of data centres in College which are expensive to manage and maintain. It will also allow, in 2013, for the provision, of a private Cloud solution for College users, the use of public and hybrid cloud solutions in a cost effective and scalable manner and scalable storage solutions.

5.2 Information Transportation Systems enhancements - (Network Cabling)

Despite the increased numbers of users accessing the College wireless networks additional fixed data network outlets and associated cabling were provided in a number of areas, generally in support of refurbishments or upgrades. In total 50 network enhancements were executed in 2011/12.

5.3 Gigabit to the desktop - (Enhanced network speeds)

A total number of 3,408 active data ports were upgraded from 100Mbps to 1Gbps, otherwise known as Gigabit, by the acquisition and commissioning of 71 new gigabit network switches. The installation, configuration testing and commissioning was performed out of normal hours to maintain network service continuity to end users. This means that IS Services has now switched over 95% of College users from 100Mbps to 1Gbps (an increase in speed of 10 fold) offering users enhanced performance, resilience and reliability.

5.4 Wi-Fi Infrastructure Enhancements

Strategic Plan 2009-14 Action 6.13 “Transform the campus experience with mobile web”, recognised both the transformative nature of mobile technology and the continued need for College to invest in this area. The College Wi-Fi network infrastructure experienced modest growth in 2011/12 as the number of Wi-Fi access points installed throughout College sites increased by 53 with an additional 10 upgraded. The majority of these were installed in Botany Bay residences Houses 11 to 20 to support Student mobile access and Trinity College visitor accommodation services. Additional access points were installed in Sports hall, Provost’s House, Goldsmith hall, (NetSoc society room support), St James' Hospital Sir Patrick Dun's building CPL area, Hamilton Library area (additional capacity), and West Theatre.

Table 3 – Growth in wireless network usage at TCD

Description	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12
Staff and student wireless users	200	750	1500	2150	3750	9770	11,245	12,340
No. of wireless access points	145	290	469	607	650	700	980	1,100

5.5 Procurement related value for money assurance improvements;

5.5.1 Mobility Service Phase 1 Bring your own device

This procurement exercise also supported Strategic Plan 2009-14 Action 6.13 “Transform the campus experience with mobile web”, by generating a framework of suppliers that could be drawn upon for 5 (plus two additional) to help in providing solutions to support the growing need of the College community. The restricted open EU tender, formed a framework of two suppliers, which will be used to support mobility middleware services in the short to medium term.

5.5.2 Core network maintenance tender

The critical core components of the college data network including the routing and switching infrastructure, central wireless equipment, Firewall/security and network access control equipment, and the IP Telephony system, are covered under a 24/7 maintenance and support contract by a third party. This is to ensure timely replacement of failed critical components and resolution of hardware/software faults to minimise disruption to end user services and maximise business continuity under fault conditions. The contract was due for renewal in 2012 and a preferred maintenance and support partner for the next three years was appointed in Q1 2012.

5.5.3 Leveraging other HEI Community Procurement Agreements

The College network comprises of over 1,500 infrastructural network switches, routers Wi-Fi access points, and specialised sub systems which typically have a useful life of 5 years. Approximately 300 elements are procured and replaced annually. Value for money is assured through the use of EU, National, HEI community and organisational procurement policy and related competitions procedures. In 2011/12 the UCD network equipment framework was used to acquire network switching and Wi-Fi equipment at highly competitively discounted rates.

5.6 Internet Service

The Colleges internet proxy service has been upgraded to a new Fortigate proxy service in 2012. The upgrade has replaced an end of life service and has provided the following benefits; enhanced content filtering and application blocking; increased throughput; greater application support, and a new single signon service for windows computers ensuring that users no longer need to authenticate for web access.

5.7 AD Server 2008 upgrade

Colleges Active Directory authentication service was upgraded from Server 2003 to Server 2008 in Q3 2012. This service provides a mechanism for logon to all major College services. The final stage of this project to upgrade to Server 2008 Release 2 will be completed by the end of January 2013. This newly upgraded service has been designed to allow for enhanced security, the adoption of new Microsoft Active Directory features, more resilience and an industry standard authentication service.

5.8 Server Management

IS Services has continued to extend its virtual hosting service to College in 2012, it consists of a centralised server farm of 14 physical hosts and 270+ virtual servers supporting the main College Systems and managed via VMware Virtual Center. ISS provisioned the following major College services in 2011/2012 from this infrastructure new Genesis student system, new College HR system, upgraded College timetable system, College SharePoint service.

5.9 Centralised Data Storage Service

IS Services manages multiple SANs (Storage Area Network) providing College with a total of 285 TB's (Terabytes). Centralised IT storage is provided to a large number of College services across administrative, research and academic areas.

5.10 Statistical Information

[Appendix C](#) provides detailed analysis on usage of the College web and email services.

6 Management Information Systems & the Programme Management Office

6.1 Enabling the College's e-Strategy Programme

The Management Information Systems group (MIS) provides key enabling services to ensure the success of the College's eStrategy programme. The main work carried out during the year is outlined below.

6.1.1 GeneSIS Project

IS Services continued to work closely with the GeneSIS project team. This year, the emphasis was on delivering the software components that enabled the SITS application to be fully integrated with all other systems in the College. An internal project team was established to co-ordinate the work of all groups in IS Services and this approach worked very well. MIS work included the delivery of the staging area; integration software; database environments; interfaces (22 in total, of which 14 were completed and live at year end) and data migration for the project. All interfaces were delivered on time for the project to enable its modules to go live. Specific software was also developed to automate the creation and management of student identities and to integrate them with the College's identification and authentication system, Active Directory.

Once the SITS application went live, MIS staff undertook initial troubleshooting, error fixing, general support for the GeneSIS project team and ongoing support for the integration components of the system. Legacy systems and utilities that are no longer needed because of the GeneSIS project are being retired on a rolling basis to enable IS Services to remove so-called legacy software and hardware from the College's ICT infrastructure.

6.1.2 FIS project

The FIS project moved into implementation phase during the year and MIS staff were appointed to work on the project team during requirements gathering and solution design. Staff also took part in workshops to identify functional requirements for aspects of the systems and to begin early work in systems integration requirements. Additional staff will be recruited in the coming year to support the FIS project.

MIS, through its Quality Assurance function, is also managing the external quality reviews of the FIS project and a number of such reviews were conducted during the year, with reports being submitted to the FIS Project Board.

6.1.3 Enterprise Architecture and Identity Management Project

Having completed and published the Enterprise Architecture (which is now serving the College in the choice of ICT platforms, technologies and tools) the focus in 2012 was on the delivery of an Identity Management system for the College. This is being achieved by implementing the necessary IT and software infrastructure to establish a

central Identity Management system to enable College and non-College users to access services to which they are entitled. The project will also facilitate the removal of legacy Identity Management systems without major disruption.

The main achievements in 2012 were;

- A detailed analysis of Trinity's legacy Identity Management Architecture was completed. This legacy architecture was put in place over many years, is highly complex and is tightly integrated with existing systems. This analysis work provided the necessary foundation to facilitate the removal of legacy Identity Management systems without major disruption to College.
- A significant upgrade of the College Domain to use Windows Server 2008 R2 Active Directory was completed. Active Directory is the College single-sign-on system for networked services. The work included establishing an optimised domain design and transition of all existing IT services to use the new domain architecture. Windows Server 2008 R2 introduces many new features and technologies that will help to increase the security of the domain, increase productivity, and reduce administrative overhead.

6.1.4 HR Programme

MIS worked closely with the HR project team to deliver many elements of the HR Programme under e-Strategy. Services provided included;

- Upgrade of the CORE HR system to provide the basis for further rollout of services to end users.
- Implementation of a document management system, based on SharePoint and integrated with the CORE HR system, that removed a significant administrative burden from HR.
- Implementation of forms services, based on SharePoint, to reduce administrative complexity and deliver a better service to end users.

6.1.5 Enterprise SharePoint 2010

There was and continues to be a very strong demand from all areas of College for collaboration, workflow, business automation and document sharing services and these needs are being met by the Enterprise SharePoint project. In addition, applications such as the HR Document Management System and the Research Proposal and Awards Management System are also being delivered on the SharePoint platform.

During the year, further work was carried out on the delivery of the ICT infrastructure to support the rollout of SharePoint across the College. A rolling programme of implementation of the new SharePoint system is also underway. Staff can now access the SharePoint system from outside College using a web browser and their college credentials.

Areas that were upgraded to the new platform during the year include:

- Office of the Chief Operating Officer
- Senior Administrative Management Group
- Treasurer's Office
- Finance Committee
- Information Systems Services
- Disability Service
- Careers Service
- GeneSIS Project
- Internal Audit.

Following consultation with Trinity Research and Innovation (TR&I), a Research Themes SharePoint site was created to enable collaboration for the implementation of College's Research Strategy. The Library Service is also in the process of setting up their site and document libraries.

6.2 Operations, support and systems' enhancements

With the implementation of projects such as GeneSIS and FIS, the underlying database architecture in IS Services has grown to a significant degree. MIS supports the existing and additional database environments to ensure that they are secure, resilient and available as expected, which is normally on a 24x7x365 basis. MIS works closely with project teams and vendors to ensure that their applications and database environments are properly integrated into the College's overall architecture. MIS also provided the required integration services at database and application level to ensure that all applications work seamlessly together.

MIS continues to support existing applications and now also has a significant role in supporting the integration components for the GeneSIS project. During the year, MIS received 1,350 Help Desk support calls, of which 1,140 were closed in the same period.

6.3 The Programme Management Office (PMO)

The Programme Management Office (PMO) was established in 2009 and provides a range of services to add value to projects being run by, or in conjunction with, IS Services. The PMO's functions include:

- Promotion and enforcement of the use of standardised project management processes
- Development and conduct of project manager training
- Improvement of project collaboration, reporting and communications
- Assistance in alignment of projects with College strategy
- Maintenance of a project management repository
- Assistance with governance of projects
- Monitoring and reporting project progress for senior management and hosting PMO meetings

- Assistance to project managers in project management practices using forms, templates and other documentation
- Assistance with identification of deliverables and milestones once projects are proposed
- Assistance with the management of IS Services resources

The PMO is currently overseeing the management of 16 projects across a range of technologies and services. The PMO meets regularly with all ISS project managers. This is done first via plenary meetings (each six weeks) where all current projects are represented, milestones discussed, and issues identified.

In addition, PMO meets individually with project managers to assist in understanding the framework, proposal preparation and evaluation, initiation, planning, document preparation, signoff and closing stages of projects. These meetings include weekly liaison with the four e-Strategy projects - GeneSIS, FIS, HR and Enterprise Architecture.

The PMO prepares and presents a fortnightly report, including management dashboards, for ISS senior management and this report is also provided to other groups/committees such as the Project Management Group (PMG), and the Library and Information Policy Committee; for project status updates and assistance in the project approval, prioritisation and decision-making process.

In 2012, the PMO carried out a detailed review of the Project Management Methodology that was first put in place in 2009 and of all lessons learned from projects completed during the past three years. Outcomes of the review include a new edition "Guide to the Project Management Framework", an increased emphasis on change control and end phase signoff, formalised approval and prioritisation criteria for proposed projects and new formats for management reports. This information and these revisions will feed into training and communications plans for the PMO for the next year. Details of all projects are available at; <https://isservices.tcd.ie/projects/>

6.4 Quality Assurance

The internal MIS Quality Assurance function (QA) has been contributing to the e-Strategy programme of projects as follows:

6.4.1 GeneSIS:

- QA function developed a support template for SITS-related interfaces developed and supported by IS Services.
- Work has also commenced on defining the work to be carried out to decommission Admin5, which, as a platform, is out of support. The decommissioning of Admin5 will bring with it significant benefits including the freeing of resources from support and maintenance of legacy-based systems and hardware.

6.4.2 Financial Information System (FIS)

- The QA function carried out an initial independent desk scan review of the FIS project, and has also acted as a liaison between the FIS project and independent QA auditors (PwC) on subsequent reviews.

6.4.3 Enterprise Architecture - Identity Management

- The QA function has carried out a desk scan review of the EA Identity Management project.

6.4.4 Other Quality Assurance (QA) activity

As part of normal routine, the QA function also carried out:

- Reviews and random checks on current ISS projects and identification of issues for further action by the relevant person in IS Services
- Testing and verifying of the upgrade to Project Server 2010
- Reviews and updates to QA process documentation
- Reviews and updates to PMO documentation and templates
- Defining new templates and report requirements as required for PMO and QA purposes.

The QA function also assisted the Enterprise SharePoint 2010 Project to develop policies and procedures to underpin the use of SharePoint within College.

7 IT Work Programme 2013

7.1 Summary

Building on the recommendations from the Quality Review in 2012 and the implementation of these recommendations; and working with the START team on change initiatives will result in a significant year of change for IS Services in 2013. The year will see the department leading on a new technology direction and also the restructuring of IS Services to better meet the needs of end users and support the College's core missions of Teaching and Learning and Research. IS Services is committed to supporting the College's core missions of education and research by assisting staff and students reach their goals through the delivery of customer focused IT products, supports and services.

Some new services in 2013 will include mobile and cloud development, which will allow flexible access to IT Resources, Content and Applications. The introduction of Blackboard Learn in 2012 has been very well received and the further development of eLearning infrastructure will be a priority in 2013.

The development of a "one stop shop" portal for students based on an upgrade of the existing TCD connect service will allow students to access all the IT services they require from a single logon page.

In 2013 we will build on our continuous improvement initiative, and introduce new cloud computing and increased mobility services.

We will continue to foster communication and customer interaction by continued engagement with our User Group and IT Support staff outside of IS Services; and the introduction of a Schools liaison and ambassador programme.

7.2 Developing eLearning services

Building on the successful transition from Web-CT to Blackboard Learn in 2012 and working with the Centre for Learning Technology, we will encourage the enhanced use of eLearning Services through a number of initiatives which focus on the development of content and the use of best practice technologies;

- Support community content development projects
- Introduce eLearning collaboration and web conferencing services
- Increase the number of facilities with lecture capture capability and provide personal lecture capture facilities using laptops if required

7.3 Enhancing the User Experience with mobile and cloud computing

During 2012, IS Services has worked to develop new models for our services and infrastructure, using the best new technologies available. In the past year these included a new pilot mobile service on Apple handhelds and the development of a collaborative cloud solution as well as the completion of a new Green Data Centre.

In 2013 we will extend these developments to provide the most efficient and beneficial services for TCD staff and students:

- Extend the implementation of Cloud based services, by evaluating the move of staff email and other commodity IT services to the Cloud
- Building on the Infrastructure as a Service project create a cloud compute platform using both internal and external infrastructure
- Provide shared storage facilities, combining HEAnet and TCD resources
- Continue trials of end user devices, including Android, Chrome and Apple handheld device
- Further development of the TCD mobile app to allow access to more IT services.
- Pilot the next generation TCD Connect service for students which will develop a single portal for all student services
- Pilot a new virtual desktop environment starting with the student computing labs.

7.4 Refreshing the IT Infrastructure

Demand on our IT infrastructure is increasing at a rapid rate due to the rapid expansion of the campus (and remote sites) over the past number of years, and the growing use and dependence on IT services. The completion of the new Green Data Centre in 2012, and the upgrade to the College networks and servers in 2013 will provide an infrastructure that will enable key projects such as Mobility and Collaboration to start in 2013

- Increase the number of wireless access points available both on and off campus and replace existing wireless access points with those that provide for higher numbers of users
- Complete the project on “Bring your own device” (BYOD) enabling mobility and the use of handhelds and tablets by staff and students to a much greater extent
- Complete the “Infrastructure as a Service” project bringing scalable and self-provisioning storage to the research community and enabling the use of private and public Cloud solutions
- Continue to retire old legacy systems as the e-Strategy projects reach new milestones thereby improving service and reliability and reducing maintenance costs
- As part of the Identity Management project provision for the concept of “Bring your own identity” enabling academics that move to College to use resources and facilities that have been developed in other institutions in a seamless and effortless manner

7.5 Focus on Green IT initiatives

As part of the College's commitment to a green environment a number of pilot projects will be implemented as part of a new Green IT initiative working with the Director of Buildings Office. Some of these will include;

- Build on the success of the new Green Data Centre and the "Infrastructure as a Service" project by offering hosting and services to Schools that currently run their own systems and facilities
- Power savings in student computer labs by using more energy efficient PC's and software that helps reduce power consumption when computers are idle
- A move towards the paperless office by running some pilots that use tablets instead of paper
- Evaluation of a centralised print solution for staff thus reducing the cost of hardware acquisition, cost of paper and cost of consumables
- Working with Procurement and Strategic Partners introduce a "replacement computer deal" that removes old inefficient computers and replaces them with new more power efficient ones

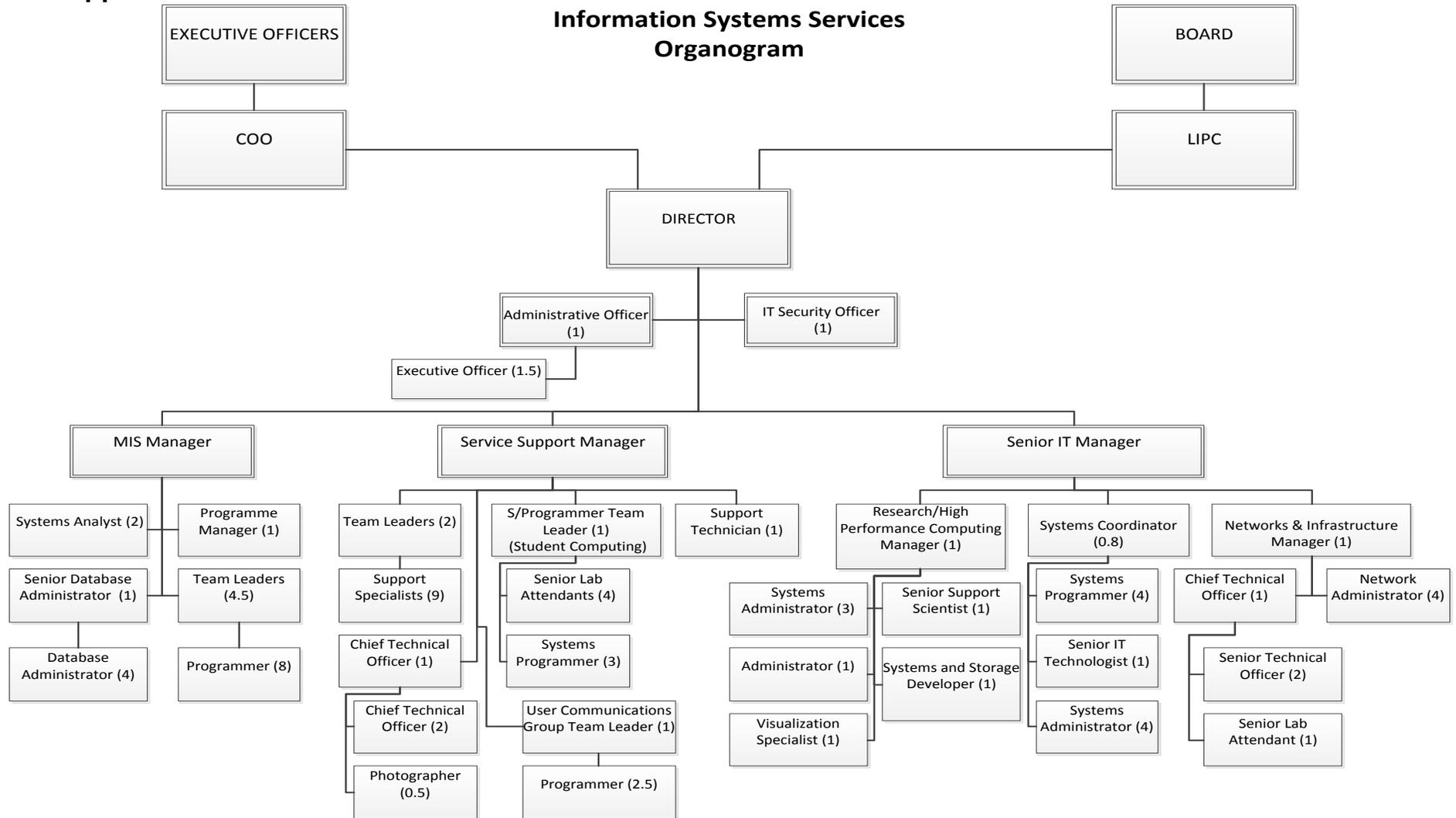
7.6 Management Information Systems

Work will continue on the progression and completion of the e-Strategy projects which are at various stages of implementation. As part of a commitment to a "cloud first" policy all new systems implementations will be evaluated to see if the services they provide can be delivered from the Cloud. Some of the projects that the MIS group will be working on in 2013 are;

- College Customer Relationship Management system (CRM). A cloud based system that support activities in the Global Relations and Research areas;
- Continuous improvement and development of the Tara and Research Support System (RSS) that support researchers in College;
- Working with the Directors of Buildings Office on the delivery of a new campus card system (Access Control);
- Continuing development and rollout of the SharePoint initiative;
- Removal of a number of legacy systems;
- Evaluation of open data for future systems (Open data is the idea that certain data should be freely available to everyone to use and republish as they wish, without restrictions from copyright, patents or other mechanisms of control);
- Replacement on upgrade of CMIS timetabling system;
- Migration work to accommodate transition to the new IaaS platform;
- Application integration for new systems such as SITS and FIS;
- Upgrade of Raiser's Edge, review of Financial System and general IT enhancements for Trinity Foundation;
- Upgrade of hardware and application software for Kx Accommodation system;
- Several small systems' implementations and enhancements' e.g. Peoplefinder, Mouse Tracker, Team Foundation Server (programming collaboration tool).

8 Appendices

8.1 Appendix A



8.2 Appendix B

8.2.1 Staff and Student Satisfaction Survey

In March 2012 IS Services, working with final year students in the Department of Statistics, undertook two user satisfaction surveys, one with College staff and one with College students. The purpose of the surveys was primarily to

- find out how staff and students rate the services and support provided by IS Services;
- ascertain factors that contribute to staff and students satisfaction or dissatisfaction;
- give staff and students a voice to influence IS Services priorities and potential initiatives.

The response to the surveys was overwhelming with a total of 2745 respondents. The total number is made up of 675 staff and 2070 students, which is 14% and 12%, respectively of the overall staff and student populations. The survey report summarises the satisfaction ratings and importance scores in respect of the services provided to College by IS Services; the level of satisfaction overall with IS Services, in terms of those either very satisfied or satisfied with the services, was 75% of College staff and 58% of College students.

The services were rated for satisfaction from 1 to 5, 1 being 'Very Satisfied' and 5 being 'Very Dissatisfied'. The services were also rated by importance from 1 to 5, 1 being 'Very Important' and 5 being 'Very Unimportant'. It should also be noted that the importance rating of the services are relatively in line with the satisfaction levels.

Overall Importance Ratings for Staff				
Service	Most Important	Second Most Important	Third Most Important	Rating Average
Email & Calendaring	51%	34%	16%	1.65
Wired Network	47%	37%	16%	1.69
Helpdesk	48%	24%	28%	1.80
Website	N/A	N/A	N/A	1.89
Wireless Network	31%	34%	35%	2.04
Audio Visual Equipment	28%	37%	53%	2.07
Management Information Systems	27%	27%	47%	2.21
Web Services	12%	52%	36%	2.24
College Computer Rooms	18%	36%	46%	2.27
IT Security	15%	33%	53%	2.38
Software	9%	38%	53%	2.44
File Storage Space	10%	33%	57%	2.47
IT Training	7%	35%	58%	2.51
Hardware & Software Purchasing Advice	3%	25%	72%	2.69

Overall Importance Ratings for Students				
Service	First	Second	Third	Rating Average
Wireless Network	56.7%	29.7%	13.6%	1.57
MyZone Email & Calendaring	48.0%	34.4%	17.6%	1.70
Wired Network	44.4%	36.7%	19.0%	1.75
College Computer Rooms	19.7%	38.3%	42.0%	2.22
Helpdesk	18.2%	28.7%	53.1%	2.35
Web Services	21.5%	31.0%	47.5%	2.36
Printing	10.2%	35.0%	54.8%	2.45
File Storage Space	10.2%	32.9%	56.9%	2.47
Software	9.9%	32.3%	57.8%	2.48
Email Stations	7.3%	34.1%	58.5%	2.51

Overall Satisfaction Ratings for Staff	
Service	Rating Average
High Performance Researching Computing	1.76
Helpdesk	2.00
Email & Calendaring	2.07
Wired Network	2.12
Website	2.25
Software	2.38
Audio Visual Equipment	2.50
Wireless Network	3.38

Overall Satisfaction Ratings for Students	
Service	Rating Average
MyZone Email and Calendaring	1.62
Website	2.42
Email Stations	2.44
Site Licenced Software	2.44
Helpdesk	2.45
Computer rooms	2.62
Wired Network	2.76
Printing	2.98
Wireless Network	2.99

Top 5 Highest Satisfaction Ratings for Staff	
Service	Rating Average
Availability of the Wired Network	1.77
Reliability of the Email Service	1.80
Ability to get through to a person at Helpdesk	1.96
Timeliness of initial response from Helpdesk	1.98
Speed of the Email Service	2.04

Top 5 Highest Satisfaction Ratings for Students	
Service	Rating Average
Reliability of MyZone email service	1.46
Ease of Use of the MyZone email service	1.61
Speed of the MyZone email service	1.71
Features on the MyZone email service	1.78
Location of email stations	2.16

Top 5 Lowest Satisfaction Ratings for Staff	
Service	Rating Average
Ease of getting connected to the Wireless Network	3.59
Time taken to get connected to the Wireless Network	3.43
Documentation for the Wireless Network	3.21
Availability of the Wireless Network	3.16
Ongoing support for the Wireless Network	3.15

Top 5 Lowest Satisfaction Ratings for Students	
Service	Rating Average
Ease of connecting Wireless network	3.50
Reliability of Printers	3.44
Follow up to reported problems with printers	3.09
Ease of connecting Wired network	3.07
Cost of printing	3.05

8.3 Appendix C

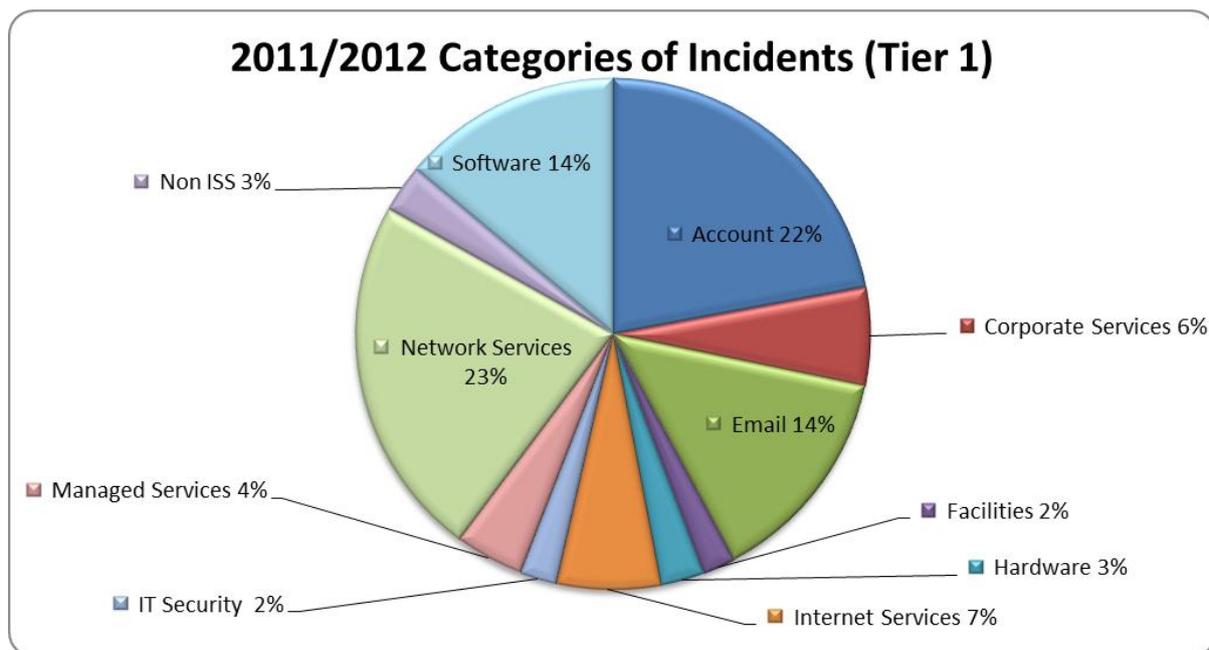
IS Services incident Management Report 2011/12.

Summary of Call Numbers to the IS Services Helpdesk for Academic Year 2011-2012

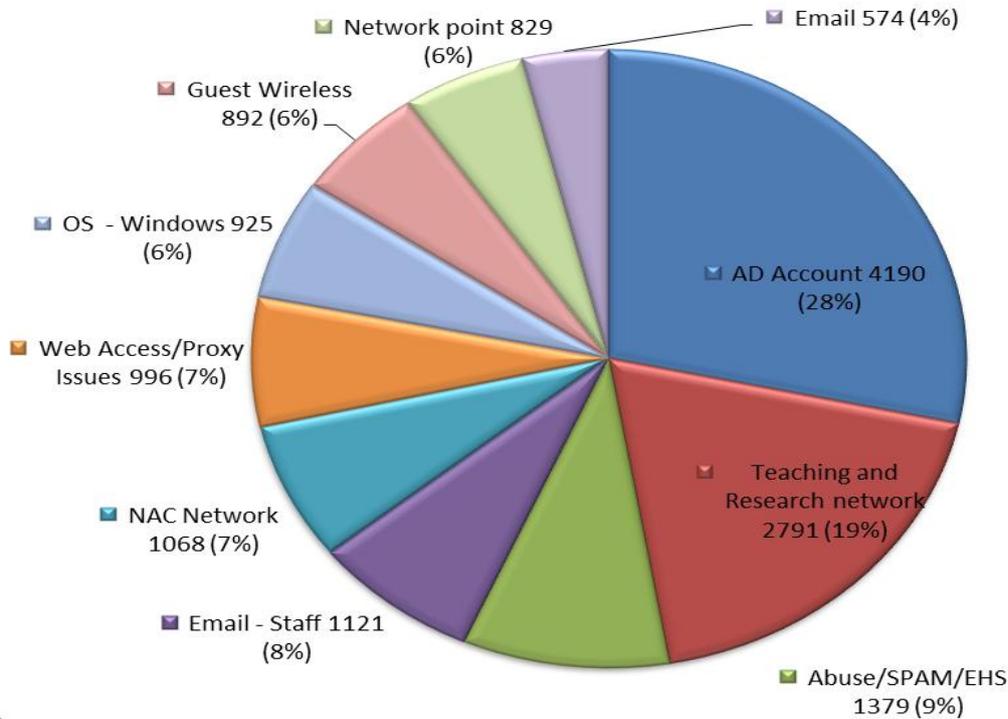
Phone Calls received (896 2000)	20,064
Emails received (helpdesk@tcd.ie)	14,725
Walk-In service(Áras an Phiarsaigh)	11,883
Web Submissions (http://helpdesk.tcd.ie)	370
Total	47,042

All Help Desk statistics are published and updated on the IS Services website including the top ten current issues for staff and students.

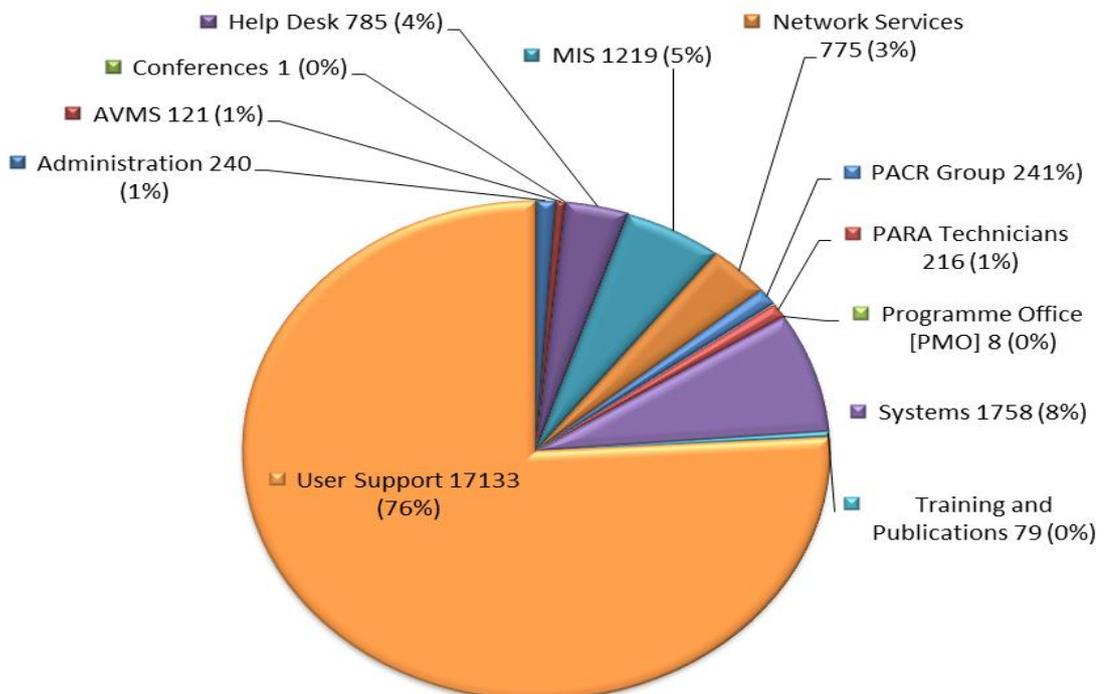
<http://isservices.tcd.ie/help/helpdesk-top-ten.php>



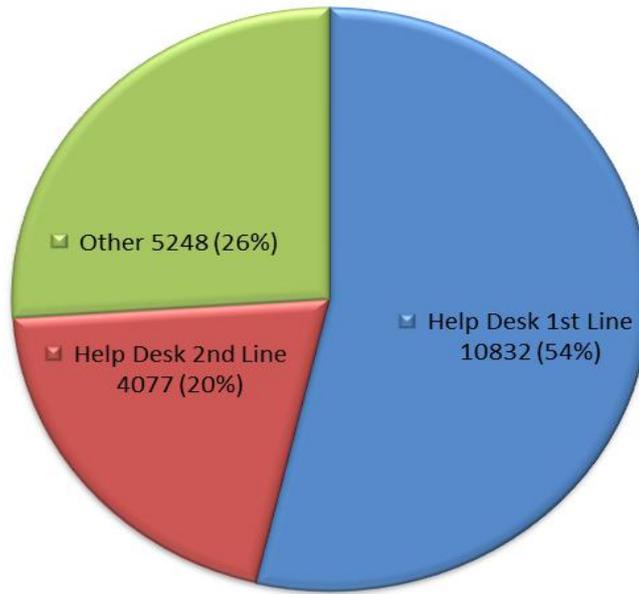
2011/2012 Top Ten Types of Incident (Tier 2) Categories



2011/2012 Incident Assignment by ISS Group

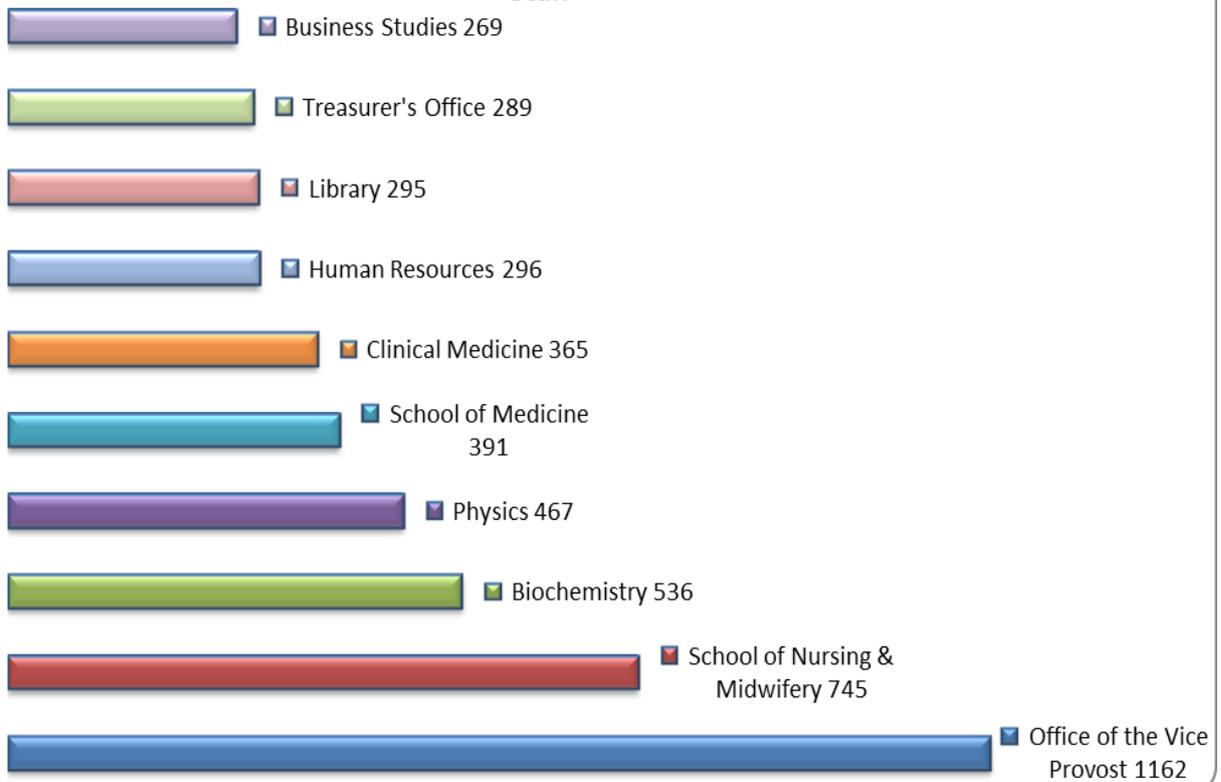


2011/2012 Resolved Incidents



2011/2012 Top Ten Departments

Staff



8.4 Appendix D

8.4.1 Unique visitors to the TCD home page Nov 2011 to Oct 2012

	Visitors	Visits	Pages
Nov 2011 / Oct 2012	3,710,770	8,902,880	76,719,453

	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12
Total Visitors	317,156	270,913	349,858	309,882	325,820	326,340	312,251	287,080	264,137	313,469	345,384	288,480
Total Visits	807,983	634,710	842,600	776,637	834,025	829,904	771,294	641,014	589,692	680,737	795,529	698,755
Total Pages Ser	7,235,652	5,138,137	7,005,700	6,226,382	6,617,345	6,025,871	5,835,774	5,293,637	4,797,453	5,736,421	10,367,038	6440043



8.4.2 E-mail statistics

Email is still the preferred mechanism for communication particularly among staff. The staff email service is built on a Microsoft Exchange platform and is run internally by IS Services staff.

The student email service is run by Google since 2007 and is hosted off campus in Google data centres.

8.4.3 Summary comparison to last year Oct 2011 to Sept 2012:

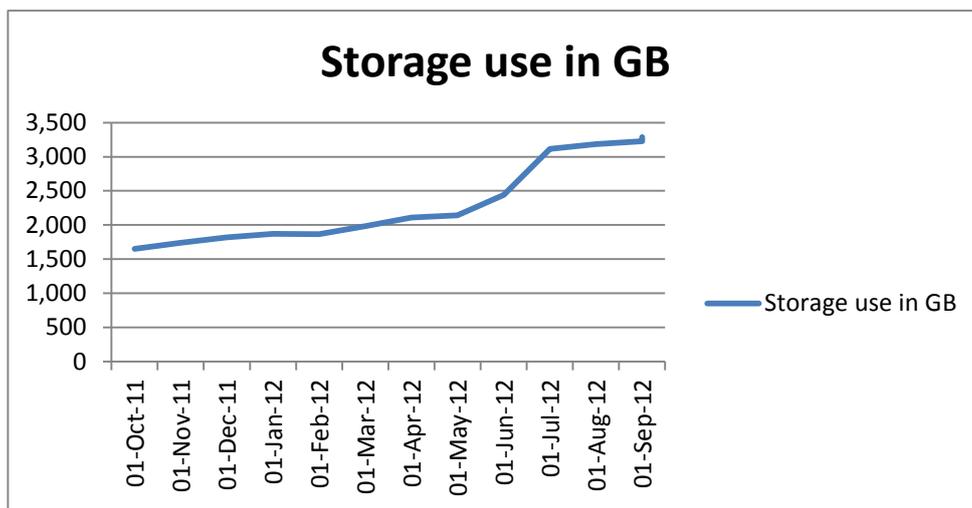
- All mail delivered to TCD staff and students - 68 million compared to 53 million last year (28% increase)
- Nearly 1000 phishing e-mails are blocked per week.
- Spam has decreased from 397 million to 320 million due to improved spam detecting by the service.

Statistics	Total for Year
E-Mail delivered from outside College to all Staff and Students @tcd.ie	68 million (breakdown - 56 million to Student, 12 million to Staff)
Number of SPAM Blocked from outside College to @tcd.ie	320 million
Number of Viruses Blocked from outside College to @tcd.ie	17700 Virus infected mail blocked
Staff Phishing Redirects from outside College to @tcd.ie	48995 Phishing emails blocked
Total E-Mail Delivered to staff and students @tcd.ie in last Year	Approximately 388 Million

Total number of mailboxes: 7750

Total Storage used: Used to end-September 2012 = 3.2 Terabytes - The storage used for the staff e-mail service has nearly doubled over the last year - an increase of 1.5 TB. During the year many users had their mailbox quotas increased to 2 GB.

Graph showing the trend in storage consumption by staff e-mail from 1-Oct-2011 to 30-Sept-2012



Staff e-mail traffic – (1-Oct-2011 to 30-Sep-2012)

	Messages Sent	Sent Internal	Sent External	Messages Received	Received Internal	Received External
2011/12	25,117,683	21,612,942	3,504,741	33,992,227	21,612,942	12,379,285
2010/11	22,941,199	19,752,956	3,188,243	31,364,208	19,752,956	11,611,252

8.5 My- Zone Statistics (Google E-mail & Documents used by Students)

8.5.1 Summary My-Zone Usage June 2011 to Oct 2012:

- 69,000 My-Zone accounts - 10% increase on last year
- 22,000 users log in daily.
- 27,000 users log in once each week.

8.5.2 Summary My-Zone Calendar usage

- 1715 daily calendar users.
- 3178 weekly calendar users.
- 5819 monthly calendar users.

8.5.3 Summary My-Zone Doc's usage

- 95,100 Documents.
- 53,000 Spread-sheets.
- 5,600 Presentations.
- 131,134 Other Uploaded files.
- 286645 Total documents stored for Students, up from 100,000 last year (180% increase).

8.5.4 My-Zone Storage

- Total storage used by all mailboxes on My-Zone is 20 Terabytes.
- Up from 14 Terabytes last year approximately a 42% increase.
- Average per mailbox is 300mb up from 215mb last year.

