IT Services + Business Improvements
Annual Report 2011
Foreword

Over the decades, the provision of general academic and administrative computer service facilities in the University has alternated between a combined service and separate departments. In January 2010, I took up the post of Chief Information Officer at the University of St Andrews, with responsibility for both IT Services (ITS) and Business Improvements (BI). This is the first combined Annual Report covering the work of the two units, for the period April 2010 to the end of March 2011.

Much of the work undertaken in ITS and BI has concentrated on issues raised by a report commissioned in December 2008 by the University from PricewaterhouseCoopers and crystallised in our recent Unit Plan – covering such areas as information security, disaster recovery, IT governance and strategy, email and calendaring provision, project management, user training and communication. Coinciding with this review, we also carried out surveys of students and staff to determine their views on the service we provide.

Emphasis has now been placed on the development of our IT infrastructure and its resilience, and the complementary establishment of appropriate core staff training. As described in this report, we have built a new data centre to house our previously scattered file servers and associated equipment. ITS and BI staff have now undertaken World Class Service training and also gained foundation certification for the IT Infrastructure Library (ITIL) framework.

From the point of view of the users, a recent high-profile development has been the outsourcing of email: the successful implementation of SaintMail for the students in 2009 (powered by Google) has been followed by the current Unimail project for staff email and calendaring; this is on track for successful completion by the end of April 2011, and is based on a Microsoft Exchange platform hosted by brightsolid in Dundee.

We made a number of staff appointments to support all these continuing developments; they include a technical architect (to analyse the technologies in use by the University and develop a roadmap), a developer for the data warehouse and QlikView, a technician in media services, and staff for website migration. Other staff changes during this period have included the retirement of Malcolm Bain, Director of IT Services from 1996 (previously Chairman of the Computing Laboratory from 1990) and of John Ball, for very many years the mainstay of support for our Apple Macintosh computers. It is appropriate also to record here the death in April 2010 (at the age of 91) of Walter Stibbs, Emeritus Professor of Astronomy; he was the main driving force behind the establishment of the very first computer in St Andrews, which initiated our IT service in January 1965.

Steve Watt, CIO
## What we promised to do

<table>
<thead>
<tr>
<th>Target</th>
<th>Target completion date</th>
<th>Completion date</th>
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<tbody>
<tr>
<td>Migrate to new user identity provisioning system</td>
<td>July 2010</td>
<td>July 2010</td>
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<tr>
<td>Staff managed desktop service available</td>
<td>July 2010</td>
<td>January 2011</td>
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<tr>
<td>Establishment of new customer engagement mechanisms</td>
<td>August 2010</td>
<td>October 2010</td>
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<tr>
<td>Storage strategy published</td>
<td>August 2010</td>
<td>Not complete: revised October 2011</td>
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<tr>
<td>Commissioning of Butts Wynd Data Centre</td>
<td>August 2010</td>
<td>August 2010</td>
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<td>Completion of wireless network roll-out to all academic and admin buildings (Phase 2)</td>
<td>September 2010</td>
<td>September 2010</td>
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<tr>
<td>Unified support service for PC and Mac desktops established</td>
<td>September 2010</td>
<td>September 2011</td>
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<tr>
<td>Google Docs available for student use</td>
<td>September 2010</td>
<td>January 2011</td>
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<tr>
<td>Active Directory Service established</td>
<td>October 2010</td>
<td>August 2010</td>
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<tr>
<td>Introduction of new service desk software</td>
<td>October 2010</td>
<td>January 2011</td>
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<tr>
<td>Storage Area Network commissioned</td>
<td>October 2010</td>
<td>Not complete: revised November 2011</td>
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<tr>
<td>New staff email/calendar/address book system implemented</td>
<td>November 2010</td>
<td>October 2010</td>
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<tr>
<td>Unimail available for retired members of staff</td>
<td>December 2010</td>
<td>May 2011</td>
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<tr>
<td>Software Asset Management system rolled out to all schools/units</td>
<td>February 2011</td>
<td>Ongoing</td>
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<td>ITIL Foundation Training provided to all computing officers and IT technicians in the University</td>
<td>February 2011</td>
<td>May 2011</td>
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<tr>
<td>New file sharing system available</td>
<td>February 2011</td>
<td>Ongoing</td>
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<tr>
<td>Gmail available for alumni</td>
<td>April 2011</td>
<td>Not complete: revised April 2012</td>
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<tr>
<td>Migration of staff to new email system completed</td>
<td>April 2011</td>
<td>April 2011</td>
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<tr>
<td>Managed build for student and staff systems based on Windows 7</td>
<td>May 2011</td>
<td>May 2011</td>
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Learning and teaching

Systems and services

The Personal Development Management System (PDMS) is a redevelopment of the software that enabled postgraduate students to book GRADskills training.

The system has been expanded to allow any training provider to advertise their courses to staff and students, who can request a place online via a user-friendly interface. Behind the scenes there is an efficient and easy-to-use management interface that allows course administrators to allocate places on courses, manage users and run reports. After placing a request on a course, users have a record of their applications and their training, accessible via the ‘My courses’ web page.

Video production over the past nine months has been consistently increasing compared with a similar earlier period. Previously, most audiovisual production was related to off-air foreign recordings, conversion and editing of the requested material for foreign language teaching. While this off-air traffic has reduced considerably, requests are now either for conversions of existing materials, or for edits needed for posting lectures on the web or edits needing to be made for examination purposes. For example, recordings have been made of the ‘Lectura Dantis’ conference series for the School of Modern Languages.

With the introduction of some small high-definition ‘Flipcam’ cameras to Media Services, lecturers are now able to record their own lectures, and we can convert them for streaming from Moodle or from their University web page. Lecturers in Modern Languages, Social Anthropology and Geography are making successful use of this service. While it does not substitute for lecture attendance, it provides a valuable means by which revision can be done by students. Careers, in conjunction with the Students’ Association, have successfully recorded test interviews with students using a Flipcam and then provided them with a DVD of their interview procedure and feedback with an interview panel. Quite a number of students made use of the service and their response was excellent. An Iranian Conference held recently was recorded with a Flipcam, edited and then turned into a DVD and streamed, making the content of the conference available widely.

Video is becoming a far more accessible documentary and academic tool for teaching – empowering lecturers to use the medium as a communication tool – as well as for other areas of University operations.

Teaching spaces

We continue to make upgrades to audio-visual facilities, for example to include wide-screen and Blu-ray capability or digital white-boards.
Research

Arts and Humanities

Digital Preservation:

In January 2010 the Arts Computing team embarked on a Digital Archiving Project (DAP), serving as a pilot to investigate different kinds of support needs for digital archiving within the University. At present it focuses on putting in place an archiving solution for local publicly-funded electronic resources in the Arts and Humanities. Initially the project has been working on archiving the Records of the Parliaments of Scotland electronic resource.

The DAP archive is being built on the Fedora Commons framework, using the Community edition of Alfresco for the ingest function and the Planets software suite for Preservation Planning. Some Alfresco Module Packages were developed in-house.

Project work on the archival ingest process was presented at the Alfresco Developer Conference, Paris 2010. We are an Associate Member of the Digital Preservation Coalition, giving us ready access to the national framework of Digital Preservation.

Other developments:

The Arts Computing team has implemented a placement scheme in research computing that allows suitable (mainly postgraduate) students to obtain transferable skills working in a professional IT research support environment. A project to address the University’s needs related to the storage and delivery of digital audio and video is in the early stages.

PURE

PURE – a current research information management system conforming to EU standards – went live in June 2010 as a replacement for the former in-house Research Expertise database. It allows all academics and research staff to maintain, in one system, lists of publications and research activities which can then be reused in University websites: since its launch, 8845 publications and 1706 research activities, honours and prizes have been added.

PURE is fully integrated with the University’s institutional open access repository, managed by the Library; it also synchronises with data from the corporate systems for HR (staff), Finance (research projects and income) and Registry (research students). It therefore enables individual researchers, schools and senior management to see the full picture of research activity, and is used during the preparation for, and submission to, the Research Excellence Framework (REF) – the successor to the Research Assessment Exercise (RAE). The REF is very important to St Andrews as it determines one-third of our research income (or one-tenth of our total income).

PURE data is used to drive the new Research@StAndrews research portal which provides a high-profile public view of research at St Andrews.
Help and support

Helpdesk

The IT Helpdesk is available during working hours by email, telephone or personal visit. During 2010, we introduced a new on-line form for reporting problems, to provide an easy, convenient and dynamic way to give us the information that we need in order to assist users.

We also offer an ‘extended cover’ service for out-of-hours reporting of core systems failures; these calls are picked up by a rota of staff. In October 2010, the out-of-hours cover on weekday evenings was extended from the current 19:00 to 20:30.

The most significant development in our Helpdesk support has been the replacement (in January) of the call management software, a collaborative venture with the Universities of Edinburgh and Abertay Dundee. Known by the name UniDesk, it uses the commercial TOPdesk software and handles the call management process according to IT Infrastructure Library (ITIL) guidelines. It offers a full incident call management system that can be interrogated to produce reports including details of service support calls.

The transition to UniDesk was very smooth with the actual implementation taking a little over two hours. The introduction of the new system brings in the ITIL process for Incident Management for logging, investigating and resolving support calls, and operators of UniDesk have taken to using the improved process change without much difficulty.

Apple support

Following the retirement of staff in 2010, support for Apple Macintosh systems has now become distributed across a number of IT Services staff and school computing officers, who attended a training course on Mac OS X Support Essentials.
Alternative Format Suite

The Alternative Format Suite (AFS) provides reading material for print-disabled students on demand. Work is carried out (under supervision) by recruited and continuously trained volunteers. During the last year the AFS supported seventeen print-disabled students, and produced about 250 e-book projects (individual chapters or whole books) as either Microsoft Word documents, PDF files or audio files. Well over a dozen University schools and units have been assisted in this way, either directly or indirectly. In addition, external support has been provided to ten other universities, as well as to the RNIB.

The Suite maintains good relations with many publishers who trust the AFS and offer their print-ready PDF books to our print-disabled students for no charge (and usually in good time). A relationship has been recently developed with a Spanish publisher, the first contact to be made with a foreign language publisher.

Infrastructure

The main themes of recent infrastructure developments have been security and resilience – leading to risk reduction – along with extension of file storage capabilities into the foreseeable future, including backup of key University data. The most significant step towards these goals has been the construction of a new data centre, providing a secure alternative and back-up site for storing the University’s digital data and alternative space for existing file servers. The University has acquired the former paper mill property in Guardbridge and a network connection to that site has now been commissioned.

Environmental management of infrastructure has also been highlighted, and this has been successfully incorporated into the development of the data centre (with a saving of £1.2m over ten years) and also into the power management of our PC configuration.

Data centre

The new data centre in Butts Wynd was completed in June 2010 in order to house file servers and associated equipment in a secure controlled environment, replacing the often unsatisfactory and unsafe accommodation located around various University buildings.

It is designed to have no single point of failure in any of its sub-systems: it is connected to two of the University’s central communications exchanges to ensure its continuity of connection to the data network, and a new 420kVA electrical power feed has been installed with a UPS (Uninterruptible Power Supply). An 800kVA generator will keep it – and also our main communications room in the Old Union Building – running in the event of an extended mains power cut.

The data centre has ample space to house IT equipment plus space for associated communications equipment.
The development of the new data centre in Butts Wynd
**Wireless**

Our aim is to provide comprehensive wireless coverage in all academic and administrative buildings and in public areas in halls of residence, and to minimise the ‘black spots’ that have poor or no reception.

Over summer 2010, we undertook a significant increase in wireless network coverage within the University, adding 151 wireless access points that are guaranteed to be compatible with the recently ratified (higher speed) 802.11n standard.

Following a trial period, we replaced the printed instructions and software CD previously supplied to users for wireless connection; we now provide both instructions and software via an open wireless connection named uos-connect.

**Mobile communications**

IT Services provides facilities for remote connections to the University’s new integrated email and shared calendar services (Unimail), using Microsoft Exchange ActiveSync or our own Blackberry Enterprise Server (BES) which we introduced in autumn 2010. Exchange ActiveSync and BES connections are secure, allowing policy management and remote device control for all smartphones connected via our services.

**Enhanced printing facilities for students**

A new ‘print kiosk’ facility was introduced – initially in the Library – as part of a facility for users to download print jobs stored previously in a Central Print Queue (CPQ). Users simply print from a public computer to the CPQ, and then go to a print kiosk and follow the on-screen instructions to get their print-out.

**Access control**

For several years, access control on many University doors has used ID cards ‘swiped’ through a reader mounted nearby; over the last year, a large number of doors have been added to this central system, including 70 in the Medical Science building and 30 in Physics. However we are now gradually moving to use of ‘proximity’ readers with new DESFire Proximity cards that contain embedded chips. During the last year, 22 such doors were enabled in Medical Science and New Hall has had 500 doors enabled with this new type of card, taking the overall number of access controlled doors to 865. The new card incorporates dual technology allowing both ‘prox’ and ‘swipe’ functionality, and so it will operate on both the current central access control system and the New Hall residence SALTO system.
Business activity

University website

Since 2006 the University website has been managed by the web team, which has grown since then from two to five members. In 2007 the University website was restructured with all unit websites being migrated into TerminalFour Site Manager (T4), an ‘enterprise web content management system’ which enables the content and design to be updated easily.

In 2008 the Principal’s Office agreed a strategy for the University website that involved moving all school websites into T4. Over the past year the team has made excellent progress towards this goal, with six schools now managing their content in T4 and a further five beginning the migration process.

In addition to this, the team has redesigned several sites (for example Chaplaincy, EHSS, Golf graduation, Library, News, Photo of the week archive, Press Office, Print and Design, Prospective students, Research, SALTIRE) and helped numerous people to change or add content to existing sites. On average the web team answers around 90 UniDesk calls per week.

The team is now using Agile software development methodologies to manage how their projects are run, and have developed a number of innovations to improve how the website is managed, such as tracking visitor statistics and how broken links are reported.

The web team holds monthly drop-in sessions for all matters relating to the web and has given training courses to over 380 staff on the use of T4 and on ‘writing for the web’. To keep users informed about what they are working on, the web team now has a Twitter account and a blog.

Software Asset Management project

To address the need for a single mechanism that provides an overview of software licensing across the organisation, a pilot Software Asset Management (SAM) project was started. The pilot has been working with a project team at Phoenix Software Ltd and implements the Phoenix Licence Dashboard software. The project is nearing completion and includes PCs in public access classrooms as well as PCs in ten service units and six academic schools.

Microsoft Campus Agreement (CA)

In 2010 the University signed up to the Microsoft Campus Agreement, covering a range of Microsoft products including Office, Windows 7 Enterprise and Office SharePoint Designer. The licence is paid centrally on an annual basis by the University, which means that there is no charge to a school or unit for use of the software, when used on any University-owned computer.
Corporate information

Portals

iSaint, a personalised, customisable information portal for current students, was launched in February 2010 after nearly two years in development. This gives information such as free PC classrooms, an interactive map with all University locations and useful town information, Library records including fines and borrowings and a catalogue search, module timetable, on-line handbook and messages. A mobile application, mSaint, was introduced in the summer of 2010, to deliver personalised information on demand to students’ mobile devices. Work is currently under way to extend iSaint to include information relevant to University staff.

ID Management project

The method of allocating and managing usernames in St Andrews had grown up in an ad-hoc fashion over the past thirty years. The locally written software served us well over about twenty years but was no longer suitable to handle ‘identities’. IT Services are working on a project to replace the current software used for setting up and managing user accounts that will include simplifying some procedures that involve access to IT-based systems. After an evaluation process which examined a number of alternative identity management solutions it was decided to purchase Novell’s Identity Manager product.

The first phase of the ID Management (IdM) project introduced Shibboleth (to manage access to online academic resources) and enabled use of single sign-on authentication for simplified access to multiple systems. It also replaced old programs and scripts that manage user accounts, giving more streamlined access to controlled systems. The new system took over full control of account creation and management in July 2010: it takes source data from systems such as student records and staff records to produce user accounts, the details of which are exported into a variety of directories that are used for user authentication and authorisation.

Phase 2 will look at building upon our existing IdM infrastructure and extending it in ways that weren’t possible with the old system, such as linkage to additional systems and services such as the Library, the access control system, Moodle and MMS, with a view to reducing the complexity of the existing data flows.

QlikView

QlikView (QV) was implemented in early 2010 as the University’s Business Intelligence tool, to provide quick and easy access to linked University data by using web-based ‘dashboards’. Several applications are now available: the most used are HR Staff Analysis which monitors all things staff-related, launched at the end of May 2010 with more than 200 users across the University – and Research Analysis (second major version introduced early 2011) used to monitor research awards and applications funding. Much work has been done in data profiling exercises, where the QV team helps the different units in going through their processes to improve the quality of the data; this in turn has brought better tool development and better dashboards. Since the upgrade to QV 10 in December 2010, more than 3,200 sessions have been logged, with usage increasing steadily and several applications being built to cover areas ranging from student data to classroom usage.
A long-running and extensive Administration Systems Project (ASP), announced in December 2008, is due for completion by summer 2011; this is very much a cross-unit effort with over twenty-five team members drawn from BI, IT Services, the central units directly affected, and their customers in schools and the Principal’s Office. The project has identified that our current systems are fit for purpose but require further development and utilisation rather than replacement.

Video production and streaming

In addition to the video work carried out in support of teaching and learning requirements, Media Services provides significant corporate publicity and documentary material, by recording and streaming University events such as graduation ceremonies and inaugural lectures. These have recently included (for Corporate Communications) the Golf Graduation, installation of bells in St Salvator’s Tower, the Medical and Biological Sciences building official opening ceremony, the new Biosciences building ground-breaking ceremony, Gordon Brown’s recent talk about ‘After the Crash’, the Principal’s Forum and other subjects; for the Chaplaincy, the University carol service, memorial services, the St Salvator’s bells inauguration service and Principal’s address.

Communication and collaboration

New email/calendar services

In September 2009, we introduced a new outsourced email service for students (SaintMail) powered by Google but using the same St Andrews email addresses as before. A range of Google Docs facilities is currently being introduced. The use of WebMail was phased out for (nearly all) students in April 2010.

Following upon this success, in 2009 we embarked upon the Unimail project to provide a unified email and calendaring service for staff. This is based on a Microsoft Exchange platform hosted by brightsolid in Dundee, and phased transfers of staff to the new system are being coordinated by a specialised team who also provide training and support. All use of the previous Meeting Maker calendar system was switched to Microsoft Outlook in January 2011, and many staff have already been migrated to use Outlook also for their email. The Unimail project is due to be completed by the end of April 2011, giving to the University the benefits of a consistent and integrated basic collaborative tool.

Wikis and blogs

There is continuing departmental use of wiki and blog facilities in the form of Confluence (purchased in 2009 as an enterprise solution).

Survey on the Information Services Newsletter

In December 2010, a survey was carried out to canvass opinion on our monthly Information Services Newsletter, which appears in both printed and online formats. The results of this survey will be used to adapt to the ever-changing circumstances of modern readership.
Further facts and figures

**Email** incoming to the University
80,000 per weekday (of which 10,000 tagged as spam) with another 300,000 per day blocked via blacklists

**Wireless** access points: added 151 (in 2010), total 357

**University website** www.st-andrews.ac.uk
Hosts over 1200 school / unit / society / personal sites with combined content of just under 200GB

The server itself:
- Hosts 35 ‘virtual’ websites for other departments
- Transfers 230 to 500GB of data every week
- Averages around 40 to 70 requests per second
- Generates 1GB of access log files per day

JPEG files account for 27% and PDFs 17% of data transferred

60% of our traffic is internal

Microsoft Internet Explorer accounts for 32% of requests, Safari 26%, Firefox trailing at 18%

Some figures for 1 January to 31 December 2010:
- Visits: 8,937,152  Page views: 28,207,602
- Absolute unique visitors: 1,788,715
- Average time on site: 3 minutes 48 seconds

Site visited 112,220 times using mobile devices
- Most popular (with numbers of visits): iPhone (53,961), BlackBerry (16,224), iPod (12,875), iPad (12,218), Android (9,318)

**PURE** (research information system)
- Publications: over 26,000
- Research activities and honours: over 10,000

**Telephones**
- Extensions: 6864 (including 4500 student extensions)
- Voicemail: 4331 mailboxes in use
- Mobile phones: O2 156, Vodafone 129, Orange 44

**Smartphones** registered via the Telephone Office and administered by IT Services:
- Apple iPhone 134, Blackberry 7, HTC 7, Nokia 8: total 156

**Freedom of Information** (April 2010 to March 2011):
The University received and processed 187 requests for information under the Freedom of Information (Scotland) Act 2002 and the Environmental Information (Scotland) Regulations 2004.

**ID management**
- Number of user accounts managed by IdM: 6259
- Number of currently active user accounts: 32744

**Printing statistics**

Numbers of sides printed via the print quota system (2007–2010), according to document type

![Printing statistics chart](image-url)

- MS Word
- PDF
- Web
- Mail
- MS PowerPoint
Helpdesk statistics

- New calls logged
- Helpdesk counter visits
- Telephone calls received 3333
- Total number of calls and enquiries

PCS submitted to PC Clinic

Telephone calls to voicemail

Front cover photo by Matthew Bowden (stock.xchng); back cover photo by David Miller and other photos by Peter Adamson (both IT Services)