“A Knowledge Management and Information Service appropriate for supporting and enabling learners, researchers and teachers in a world-class University.”
Information Services Plan 2013-16

Executive Summary
Information Services provides services and facilities to the whole University in the four areas of ICT, Library & University Collections, classroom technologies and e-learning. We contribute both directly and indirectly to the three Strategic Goals of the University – excellence in education, in research and in innovation – by providing part of the underpinning enablers of those Goals; and by contributions to the six Strategic Themes.

Key objectives for us to reach in the next three years are:

- Increased headroom in IT infrastructure and services to enable us to design and deliver new and existing IT systems to a high level of reliability and resilience;
- Increased quality of the Library digital and physical collections, and study spaces associated with them, to world-class standards;
- Provision of easy-to-use management information for all, with business intelligence capability;
- A comprehensive research data storage and management service for all academic staff and research students;
- Reduced arbitrary complexity in University processes and systems to release effort to more productive ends, aligned with continuing efficiency inside IS to enable re-investment of the effort released;
- Successful leadership in innovative education online, through the expansion of the Distance Education Initiative and Massive Open Online Courses.

Using robust business cases coupled with expanded metrics of service performance, and with continuing consultation with our user communities, we will monitor our performance in terms of services, finances, staff and estate to ensure that we target our efforts on the highest priority areas.

Context
Information Services provides services and facilities to the whole University in the four areas of ICT, Library & University Collections, classroom technologies and e-learning. We contribute both directly and indirectly to the three Strategic Goals of the University – excellence in education, in research and in innovation – by providing part of the underpinning enablers of those Goals; and by contributions to the six Strategic Themes. Our contributions are numerous and we have mapped key examples against the sections of the University Strategic Plan in Appendix 1. These services include: physical and digital libraries; technology-enhanced learning systems; corporate and academic IT with underpinning infrastructure; technologies for teaching in lecture theatres and seminar rooms; leadership for non-estate projects; knowledge exchange; and national and international collaborations and services. We assess the quality of our services and facilities through feedback and evaluation, many of them external and with benchmarking against like services in peer universities. The results of these activities are presented annually in a report to Senatus Quality Assurance Committee.

In response to the University's new approach to the planning round, we are embedding a continuous strategic management process across the entire group. This will be governed by our Planning & Resources
Group with quarterly monitoring reports from our Quality Enhancement Group. The primary benefit of this approach will be the bringing together of our planning, budgeting and quality monitoring activities thereby ensuring a more coherent and effective approach to strategic decision making.

To support the University’s vision to recruit and develop the world’s most promising students and most outstanding staff, and to be a truly global university benefitting society as a whole, we consider that by 2016 we must have reached a position in which: staff and students are able to get the information they need online, securely from any device and they can manage basic research, teaching, learning and administrative transactions online. They will be provided with high quality, technology-rich learning spaces, many of them as part of a world-class library system, which contains the physical and digital resources they require. Visitors to the University website will easily be able to find out about our services and achievements through fresh, modern and intuitive interfaces. This is very much in keeping with the three College plans, where the areas of infrastructure (library and IT), Distance Education/MOOCs and the student experience are highlighted as the primary areas of focus for the information space.

Our Information Services vision is to be a world-class support service, offering the highest quality services and facilities, efficiently and effectively, and with agility and innovation. We do this through the range of services we offer; their accessibility, resilience and reliability; the support we give to users, and the agility with which we respond to change. Through 2013-16 we anticipate that the range and depth of most of these services will increase in response to the needs of our staff, students and visitors, and in response to the ambitious plans of the Colleges and Schools. The catalogue of the services we currently offer, the expenditure on them in 2011-12, and sample performance metrics for them are shown in Appendix 2.

However, we consider that to continue to meet the University’s expectation of the high quality services it requires from IS there are some necessary pre-conditions:

1. We must systematically remove unnecessary duplication to release effort that can be focused on value-added activities and innovation;

2. We must move away from a hand-to-mouth project model to sustained investment, sufficient to enable us to reach objectives that have been agreed through robust governance processes;

3. We must recognise that continuing growth in student numbers, courses and in research in an anytime-anyplace-anydevice world may require multi-contributor, coordinated changes in our infrastructure and services, rather than incremental additions and enhancements.

We view our overall provision as consisting of three components – Run, Grow and Transform – and we aim to invest in each appropriately. Transform may be either applied to the University as a whole, when it changes the way we do our business, or it may refer to IS alone, when it involves new services and new approaches.

- ‘Run’ comprises keeping existing services and facilities operational, compliant with legislation & reporting and capable of supporting current user numbers. We always strive to leverage greater efficiencies in our backroom activities in order to release more effort for our frontline services, e.g. through LEAN processes;
‘Grow’ is the expansion needed in current services and facilities to absorb increased demand. This may emanate either from more or different users as University business changes and expands; or from existing users requiring enhanced or additional service functionality. The steady expansion of our services in range, scale and depth over the past few years of relatively restricted budgets demonstrates our underlying efficiency in absorbing growth;

‘Transform’ is the introduction of new services and facilities to enable new activities; or to convert existing services and activities into new forms (e.g. paper to digital, classroom learning to online learning). The transformation may be of a non-IS business area (e.g. Distance Education) or of an IS business area (e.g. BI/MI, Research Data Storage).

We have analysed our ‘Run’ activities to ensure that the core allocation plus uplifts combined with income earned from internal and external sources, is sufficient to operate within a sustainable financial environment. We will assess these activities to ensure they represent good value for money and expect to achieve efficiencies through this continuous process, in the coming years. Evidence of our efficiency gains leading to absorption of growth without commensurate additional costs will be provided on an annual basis.

‘Grow’ and ‘Transform’ also have a significant element of funding drawn from our core allocation plus earned income, in that the senior staff overheads, contributions to the administration and project management are part of the cost of delivery. We aim to fund as many Grow activities as possible from our core allocation and realised efficiencies. However, given our current portfolio, it is likely that in the medium term this will be insufficient and unsustainable, as the requirements of the University increase and the impact of Grow and Transform activities become part of Run. Grow and transform developments of a larger scale are beyond the capability of IS to resource from its annual funding allocation. For these developments, additional funds are sought and these are presented as costed business cases within the plan.

At present, our general view is that, with the exception of the IT Infrastructure, we cope with Run, we find Grow increasingly difficult to maintain against expanding legal compliance-driven activities, unavoidable software/hardware updates, higher than inflation costs in key areas (e.g. library materials) plus an increasing desire for enhancements to services. Transform can only be achieved through additionally funded projects.

Run
The range of services and facilities that we offer from our core + income funding underpin the University’s strategic plan in every Objective, Enabler and Theme. IS offers an extensive range of services, which has increased in breadth, scale and reliability over the past decade. This has, in most areas, placed us at least on a par with UK peers and generally on a par with international comparators. In some areas we need to invest to reach international parity (e.g. Library materials), in others we are ahead (e.g. DEI, MOOCs). The steadily increasing costs of compliance for software and data (e.g. campus-wide licences for databases and applications, research data management from Research Councils); and the expanding range of services required by our users (e.g. longer opening hours, more study spaces, mobile services) have eroded our ability to Grow. Whilst we have maintained Run against the increasing number of new services, in almost all IS areas we have reached the position in which our headroom has been lost. The metrics of satisfaction with services that we can draw on indicate, broadly, that our user-base is not dissatisfied with the quality of our provision (NSS, PTES, PGRES, ISB, LibQual+, IS surveys) but there is still room for improvement and we are
constantly reviewing our progress and seeking feedback. Some areas have greater dissatisfaction than others, and much of this can be attributed to a lack of headroom rather than to poor practice.

Areas of challenge for us are:

- Pressure of demand for study spaces across all locations and how those spaces are defined/resourced
- Lack of headroom for desired enterprise IT development
- Ageing network with limited resilience
- Tension between tight project methodologies vs looser resource management practices
- Tension between driving down costs by standardisation vs devolved decision-making and local variants
- Duplication of services at local level
- Library Materials spend not keeping pace with our comparators and our volume of growth

We have started from the latest version of our fully-costed service catalogue (Appendix 2) and with the notified uplifts per annum, have calculated that by reinvesting internal efficiency gains, we can maintain existing services at the current range and quality. We estimate that to achieve this we need to generate internal efficiency gains over the 3 year period of ~10% of our overall budget.

If Colleges and Support Groups are able to identify services that they do not need, need substantially less of, or where they could dispense with local variations, then we could divert appreciably more effort over time by automating, outsourcing or slimming down the scale of provision. Examples of such potential efficiency gains are:

- a single cloud-based email & e-diary for all staff and students;
- a single desktop University-wide for each of the PC, MAC and Linux platforms;
- a single, uniform marks and exam board software;
- use by all of virtual servers to dramatically cut down on physical servers;
- rationalisation of the telephone system.

There is a tension for us between focussing on quality of services for fewer services, versus responding to user requirements and pressure for a wider range of services. Limiting the range of services that IS offers can compel our users to source their own, which may be neither efficient nor secure. This tension can only be resolved with our partners in the Colleges and Support Groups.

Likewise, duplicated systems and services at local level result in unnecessary spend and effort that could potentially be more usefully invested elsewhere. Examples of areas where savings could be made are the multiplicity of e-learning VLEs; general IT provision and support at a local level eg in desktops; multiple email and e-diary systems, and exam boards and assessment procedures.
Key Performance Indicators
Subject to approval of our business cases (see below), continued funding of already-approved projects and uplifts of 2%, 2% and 1.5% in the next three financial years, by end 2015-16 we shall be delivering a high quality information space in which the University community will undertake its business. At the heart of this will be our services to deliver an outstanding user experience, whether they be student, researcher, academic, support staff or visitor. The list of our KPIs is attached at Appendix 1.

Grow
Using in-year efficiency gains, we will continue to invest in IS services, for example, improving the student experience by increasing the opening hours of the Main Library and two site libraries. This will move us some way towards delivering an outstanding student experience with increased opportunities for students to produce coursework, prepare for examination and conduct research; and increased user satisfaction with opening hours. It should be noted that this will impact on Estates and Buildings budgets as they will be required to provide services beyond the current opening hours. In the past IS has picked up these costs for the Main Library but this is not a sustainable model going forward and needs to be addressed by CSG.

Detailed Business Cases for the following are at Appendix 3

IT Headroom (Business Case A)
The modest changes required to upgrade and to add new features to several corporate and academic IT systems have been severely hampered by the steady erosion of our IT development and support capacity by compliance work and the demands of running an increasing range of digital services (the effect is mainly in IS Applications Division but also in IT Infrastructure). This has meant that relatively minor requests for refreshes and upgrades have been denied, to the great frustration of staff and students. To ensure that we are able to take these developments forward to the extent that it was possible 3 years ago, we need to expand our IT capacity by 15 FTEs.

The impact of this investment will be the creation of sufficient capacity in the services that support and develop the enterprise systems. This will enable IS to better meet the expectations of Colleges and Support Groups in delivering high priority developments that currently fall outwith our available resource.

Library Annex (Business Case B)
As a result of reversing the original design for the Main Library, we have placed study spaces and stacks on the 4th Floor, displacing our staff to other locations, and a larger share of our collections to the Library Annex at the Gyle than planned. The steady growth in the physical collections will result in lesser used materials being routinely transferred to the Annex, something that will not for some time be significantly offset by digital materials. Until summer 2013, the rental cost for the Annex is covered by the ML Redevelopment Project, but as of 1 Aug 2013, the annual cost (£387k) needs to be reattributed and the obvious place is within Information Services.

The impact of this investment will be stable services for the next three years while longer term plans are in motion to bring a permanent solution to the need for high-quality external storage and processing services.

IT Infrastructure (Business Case C)
As the University has expanded so too has the demand on the IT infrastructure. As part of the normal core expenditure, IS spends c.£1.6m recurrently on supporting the infrastructure. In recent years this has become inadequate and additional funds from IS reserves, NPRAS allocations and other earned income have been
used to enable one-off investments, such as the purchase of new physical infrastructure for the Oracle Database. As the University grows the demand placed on the IT infrastructure is immense. Over the last 3 years the contingency element of the recurrent budget has been eroded due to the growth in new areas such as TEL software, mobile applications and the change to self-service issue within the libraries. As a result the budget plus annual uplifts is no longer adequate for the required investment in the IT infrastructure.

The business case sets out the investment requirements for the three year period and highlights the shortfall between existing budget and required investment associated with modest Grow including growth in maintenance requirements. **Impact of this investment will ensure that our infrastructure is maintained at a level commensurate with the requirements of the university community. It enhances reliability and contributes to keeping unplanned downtime at a minimum.**

**Study spaces & open access labs (Business Case D)**

A review of study spaces in 2012 showed that IS manages 4,900 of the 8,000 spaces available (just over 60%) with 1,600 of these having a computer workstation. The quality of study space is extremely important to students and we highlight the growing use and acceptance of facilities at the recently refurbished libraries at Main Library, Easter Bush and Kings Buildings. The design, fabric and overall quality of the area have been identified by students as key factors in whether or not students use an area.

With study spaces competing with exam spaces at two periods in the year we wish to maintain all available areas at a reasonable level. Students have shown quite understandably that there is a preference for the newly refurbished locations but and so there is a need to improve maintenance of the older sites to acceptable levels, to encourage students to use all of the sites available. We will keep in close communication with the Colleges, EUSA and the Learning and Teaching Committee to ensure that study spaces are promoted and managed well. **The impact will be improved student experience with those study spaces managed by IS which will maintain a consistent and high standard across all sites. Student experience will be the same with standard kit and processes at all locations. This will enable us to provide students with good choice of locations and venues where they can be sure of quality services and facilities. It will also relieve pressure on the newer facilities at the Main Library where demand is considerable and move us towards achieving an outstanding student experience across all sites.**

**IT security (Business Case E)**

The increased scale of digital systems in the University that enable access to personal, financial and commercially-valuable data has caused us to review our approach to IT security. We intend to introduce a series of changes to the password processes for central services, increase outreach to students (in collaboration with EUSA) and staff (with Schools and Support Units), backed up by Internal Audit assessments of the robustness of practice University-wide. **IT security will be included in the areas routinely discussed at Audit Committee, IT Committee and Knowledge Strategy Committee**

The impact of this investment will be increased security of the network as a whole, and improved security provision for Schools in particular. This will enable the University to be more resilient and capable of withstanding attacks and network failures, which reduces the risk to the University of data loss, denial of services and reputational damage.
Telephone System Replacement (Business Case F)
The University telephone network is primarily based on technology which is now 20 years old. Some 3,000 extensions have been migrated to NEC’s VoIP (Voice over IP) technology. The old system is becoming unmaintainable and critical service issues could arise by 2017-2019. The migration to VoIP has, to date, been funded "opportunistically" but this is not fast enough to enable the legacy systems to be decommissioned by 2017. IS therefore seeks funding of £1.64m to complete the VoIP deployment by the end of 2017. The impact of this investment will be reduced maintenance costs and increased flexibility for telephone users across the University.

Transform

Detailed Business Cases for the following are at Appendix 3

Library materials (Business case G)
The Library Collection Review led by VP Nigel Brown in 2012, recommended an uplift of £1M in the sum allocated to the then current materials budget of £4.5M (20% of IS core budget allocation). In the 12-13 planning round £0.5M recurrent was added to the IS budget for library materials, with the remaining £0.5M to come directly from Colleges. Following a subsequent light review in autumn 2013 with the three Colleges, we are agreed that a) the 50:50 split of the additional £1M is unhelpful and would be better allocated directly to IS on a recurrent basis, and b) that this sum will reduce but not solve the gap between UoE and both its UK and International peers. The business case outlines an alternate funding model for library materials, based on a percentage of university turnover, that would rebalance this gap.

Impacts will be substantial improvement in the library collections purchases of monographs and journals for all users from every College; reduction in the gap seen by new academic staff in some subjects with respect to peers/competitors; a reduction in competition by students for course readings; an overall ‘feel good’ factor regarding the University’s commitment to investing systematically in this core infrastructure; and a greater satisfaction with the library’s collections as measured in staff and student survey results.

BI/MI (Business Case H)
Following wide consultation with the academic and support service community, the need was identified for a holistic approach to providing accurate and timely management information and business intelligence support. IS included this in its 12-13 plan. Having completed the first phase of this work with the assistance of DeLoitte, we are ready to move to the second phase and to set out a flexible roadmap for the next few years. The governance group, chaired by VP Miell, will oversee these developments.

Impacts will be quick wins on easy access to visualisations and analyses of currently-held data, steady increase in the range, quality and accuracy of university business data, enhanced ability of all to understand trends and forecasts for their own areas of business, and to employ evidence-based decision-making.

Massive Open Online Courses (MOOCs) (Business Case I)
The University has successfully positioned itself at the forefront of the UK, and arguably many of our peers in the world, in offering MOOCs as an early adopter/innovator. Our initial 6 MOOCs attracted almost 300,000 learners in Jan 13. PSG agreed a managed and targeted approach going forward, with modest numbers of MOOCs being developed against clear business objectives. Support is required for liaison with Coursera on business models, technical issues, publicity; pedagogical and technical support is required for MOOC teams internally, plus coordination with C&M, Heads of Schools, and University Committees. Evaluation will be an important work stream over the next few years.
**Impact** will be: contribution to UoE reputation in HE and government circles; educational knowledge for use in ODL and on-campus courses; increased recruitment in key areas.

**High Performance Computing Service (ECDF) (Business Case J)**
By 2014, the current infrastructure will be nearing end of useful service life and to ensure ongoing function of the service, that the facilities remain suitable and competitive for world-class research and to prevent fragmentation of delivery by research groups being required to build their own facilities, a refresh of the current infrastructure is proposed. CSCE will continue to use the service effectively as in the past, CMVM will be able to grow their use of central facilities and CHSS will benefit from resources for supporting digital humanities in the visualisation and presentation of data.

**Impact** will be a truly University wide service, available equally to all across the University. The service will be more flexible in integrating computational codes outside a fixed cluster environment and will also be suitable for hosting virtual research environments.

In addition, we are presenting two business cases for investment of the earmarked £1.5m EDINA reserve.

**EDINA business continuity & income diversification** (Business Case K)
EDINA has to achieve recurrent efficiency gains across its services, organisation and IT infrastructure of 5% (compound) for the next three or more years, whilst still delivering and improving service quality and investing in future sustainability. The programme suggested includes front and back office efficiencies, process efficiencies and a capital spend contingency for hardware.

**The impact of this investment will be the reduction of risk to the University whilst maintaining services used by UoE as well as all other UK universities. It will also maintain the University’s excellent reputation as a national service provider which enables us to compete more successfully for external funding.**

**Enablement of Services and Website for Mobile Internet** (Business Case L)
Due to rapid technology change and increased expectations across the H/FE sector, there is a strategic imperative that all key EDINA services (and its website) are enabled for support of mobility and multiplatform delivery: context aware and with device specific capabilities where appropriate. EDINA has invested in mobile application development and is regarded as a centre of expertise within the sector. Based on recent knowledge and skills transfer to the LSE, EDINA anticipates comparable sharing of expertise to benefit the University.

**The impact of this investment will be recognition for the University/EDINA as a world-class centre of excellence in mobile service provision, facilitating flexible learning journeys, and supporting individual and group working both on-campus and while mobile.**

**Previously Agreed Projects**
In previous years, we have agreed a number of multi-year projects and to ensure that these remain visible in the planning round we have listed these below. The financial commitment, including reserve movements, for each project is set out on the first page of Appendix 3. In each of these cases continuance of the project is contingent upon the funding being made available in 2013/14.
Teaching rooms – funding for AV and fabric budgets to LTSAG
Research Data Storage & Management Service
Distance Education Initiative (DEI)
Library Annex - leased premises transfer from MLRP1
University Website
Shared Academic Timetabling

IS Enablers – Finance, HR, Estate & Communications

IS has its own enablers: our c600 staff; the £29M unrestricted / £7M restricted budgets which we manage; the estate in which our staff work; our communications channels to our users and for ourselves, and our collaborations, both internal and external. These areas are overseen by our Planning and Resources Group which comprises the VP, 6 Directors, Head of KM & IS Planning, Head of IS HR, IS Management Accountant and IS Facilities Manager. It meets monthly to review progress and take decisions on our direction, both in the longer term with strategic planning and in the immediate term, tracking progress towards targets and KPIs and monitoring financial spend.

Financial management

Our financial performance over the past few years has been good. We have grown our income and accumulated modest reserves for planned reinvestment in the infrastructure in future years.

Since the appointment of our Management Accountant in November 2012, we have begun a process of redeveloping our monthly and quarterly reporting to include a more comprehensive set of Management Information for P&R to help them understand and track our income and expenditure. To achieve this, the Management Accountant is working closely with the Divisions on the financial processes within the Group.

Supporting and developing our staff, managing our workforce

Our new Head of IS HR provides us with MI on our staffing profiles (starters & leavers, grade changes, age) allowing us to view trends and to succession plan for the future, and leads for us on our staff development programme. We have had our own IS Learning and Development Officer since 2006, who works with UHR to coordinate a programme of training tailored to our needs, and has overseen our ADR process which has operated since 2006. We commit at least 0.5% of our budget to L&D across our Support Group. All proposals for new posts pass through our own light touch review process, so that we can seek opportunities for internal secondments and savings to release investment for service enhancement and innovation. As a consequence of partnership working with CMVM, we anticipate a major overhaul of how we offer IT, e-learning, graphics and AV support in the College, and our HR team will support an internal IS re-shaping to accommodate those changes. In addition, we will be rationalising the location of the University Website Team and the new BI/MI Team.

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1 Main Library Redevelopment Project
**Maintaining our estate**

We have appointed a new IS Facilities Manager who will oversee the we occupy and manage on behalf of our users (e.g. Main Library currently the busiest building in the University, with almost 2 million visitors in 2011/12; open access computer labs; site libraries) ensuring a safe, accessible, and comfortable environment whilst delivering World Class services to users. The spaces IS staff occupy are equally as important and these are currently spread over a number of campus locations, including both on-campus (inside libraries etc.), and off-campus (EDINA, Gyle). The majority of our staff is currently accommodated in three locations, IS ‘Core Sites’ - George Square, Holyrood, and the King’s Buildings.

This distribution, although manageable, is far from ideal. Some of our current accommodation is considered either not fit for purpose (e.g. Buccleuch Place) or is due to be redeveloped to better suit our operations (e.g. JCMB). Assessing our current space utilisation and considering our likely future requirements will allow us to develop an IS Estate Strategy. This strategy will include considerations from three main perspectives; Users of IS Space, IS Occupied space, and Financial considerations. We will work closely with E&B to establish both Medium and Long term solutions. Consideration will also be given alternative working arrangements (hot-desking, ratios etc.) benchmarking with other areas to make more efficient use of existing space.

**Communicating with our users and internally**

IS has a user community of around 200,000 comprising applicants, students, staff, visitors and alumni and this figure will continue to grow over the coming years. With several of our sites running 24 hour or near 24 hour opening and with applicants, alumni and online distance learners scattered over the globe we have developed a self-help model for many IS services by establishing a comprehensive web presence and more recently a knowledge base with the more frequently asked questions. We have also successfully introduced a 24 hour helpline service by joining an out-of-hours support service for HE run by Northumbria University that manages and logs calls between 8pm and 8am daily.

We recognise that users have different work patterns and preferences and so we will continue to enhance our communication strategy to cover not only email and portal announcements but also plasma notice boards, wiki, news pages, mobile alerts and social media networks as they emerge. We expect the use and popularity of our twitter presence to increase over the coming semesters and we will endeavour to standardise on communication mechanisms and methods with the other support units in SASG and CSG so we deliver an improved, more coherent, holistic service to all user groups.

We will work hard to exploit the current technological solutions such as Collaborate and Skype to provide excellent communications both internally and externally.

IS has produced its own internal communications strategy. We disseminate information using a variety of tools including newsletters (IS Staff News, BiTs); IS All Staff Meetings; and IS Managers Group. Our senior team meet annually at least with the Colleges and Support Groups; we meet regularly with EUSA and have representatives on all of our formal committees; and our Consultancy Teams work closely with colleagues in the Colleges.

**Collaborations & Partnerships**

**Internal**
IS has a strong commitment to partnership working, and there are numerous examples across the University where we successfully develop and offer services in collaboration with other units, Schools, Colleges and Support Services. Examples include:

Academic and early career researcher training with IAD, including e-tutoring, research data management, information literacy;

A wide range of corporate services with SASG and CSG, including Finance, HR, student and course administration, EBIS and Shared Academic timetabling, Personal Tutor systems, and the co-located Student Information Points in libraries.

Joint activities with Colleges include the High Performance Compute service (ECDF) with CSCE; support for Digital Scholarship with CHSS; working towards a single IT, TEL and AV service with CMVM.

The Digital Curation Centre provides much of the technical expertise to enable us to progress rapidly and confidently with the Colleges in the Research Data Management & Storage service

EDINA leverages marginal use of the University’s IT infrastructure and collaborates with IS in various procurements, authentication projects and storage/failover initiatives. Innovations developed by the Language Technology Group in Informatics have been used within EDINA services and in externally funded research projects (see External Collaborations).

The Data Library team collaborates with the Institute for Academic Development to produce the Research Data MANTRA online training course.

EDINA has worked in the digital repositories area with Library & Collections, and with IS Apps in the mobile internet area.

EDINA provides specialist advice on social media and student communications within the Student Experience Project of the University’s three-year £4 million Enhancing Student Support initiative. EDINA co-authored the University’s Social Media Guidelines and has an extensive network of contacts within the University, including within the Colleges, Institute of Academic Development, Edinburgh Beltane, ERI and EUSA.

EDINA provides expertise and advice on use of social media across all Colleges and support units for groups, from undergraduate through to Principal Investigator level and including EUSA staff and student representatives. Event amplification advice and planning is also provided.

EDINA collaborates within various research projects across the University that require knowledge transfer about social media e.g. within the School of History, Classics and Archaeology, School of Informatics and School of Education. The Social Media Officer develops and delivers teaching on two MSc Programmes with strong Open and Distance Learning dimensions. EDINA and Data Library collaborated with the University and the Digital Curation Centre to host the Seventh International Conference on Open Repositories (2012) in Edinburgh in July 2012. A contributing factor in winning the bid to host was EDINA’s expertise in social media amplification of international events.

**External**

IS leads, or is a major contributor, to a set of shared services in Scotland and the UK. Examples are: the Unidesk call management system used within the University and operated for the Universities of Abertay, S
Andrews, Edinburgh and Sheffield Hallam; Scottish Digital Library, run by IS on behalf of a consortium of university and specialist libraries: http://www.sdcl.ed.ac.uk/members.html

IS runs, and chairs, the EaStMAN network service for all colleges and universities in the south east of Scotland; we also provide the hub for the Jisc’s national videoconference service.

We use external shared services where possible, for example the 24hr NorMAN helpline service that provides our through-the-night-and-weekend help for staff and students; the Scottish HE Digital Library which reduces costs of e-journals for Scottish Universities; the Jisc Collections national procurement service for library materials and academic content.

The University Principal has described EDINA as one of three “key assets” for the University’s world class ICT offering (third after Informatics and HECToR/EPCC).

Knowledge Exchange
EDINA leads the development of the academic spatial data infrastructure in the UK, acting on behalf of Jisc and as part of the DEFRA-led UK Location Programme. EDINA is a member of the Scottish Government’s Spatial Information Board and assists the Welsh Government. It is planning to investigate whether it can offer data centre services to the Scottish Government.

Services to the schools sector will continue and be developed further. Ordnance Survey mapping data and the historic Statistical Accounts of Scotland are delivered to UK schools, along with support for schools that are part of the UK Access Management Federation.

Both the Digital Curation Centre and EDINA and Data Library divisions will continue to have impact in national and international communities by contributing to the state of the art in development of services and policy for research data management and open data sharing.

EDINA provides expert knowledge on digital participation through and around social media e.g. to the Royal Society of Edinburgh Spreading the Benefits of Digital Participation Inquiry, participation in the AHRC Crowdsourcing Scoping Study, Culture Hack Scotland and Open Knowledge Scotland.

EDINA’s expertise in geospatial and mobile services is being utilised by the London School of Economics (LSE) Digital Library to repurpose existing digitised, library-owned maps and notebooks for delivery to mobile devices and use in undergraduate teaching.

Internationalisation
Senior IS staff members are involved in numerous international groups and partnerships that contribute to the reputation of the University and to closer working on academic and support service projects. These include U21, LERU, Coimbra Group, the British Council, and the European Commission.

EDINA has particular strengths in the international domain, and works at this level in each of its business areas and will further develop links with important groups, including governmental, educational, standards development, research data, commercial, and web services organisations. It works with partners in Europe, North America, Canada and China and with colleagues in India, Switzerland and New Zealand.

Topics include development and use of open interoperability standards, professional development, and in some cases the actual delivery of services at international level. This is most obvious in the fields of spatial
infrastructure and scholarly publication, including digital preservation, but also extends to authentication and authorisation.

With the Language Technology Group in Informatics and Los Alamos National Laboratory Research Library, EDINA has recently won a grant award over the next two years from the Andrew W. Mellon Foundation to research assured access to content cited on the web. EDINA is also involved in a separate invited project proposal to the Mellon Foundation.

EDINA is leading a project consortium with partners in Germany, the Netherlands, Ireland and Greece funded by the European Union for the next four years. This will enable and support crowdsourcing /citizen science technologies in the collection of environmental data within a number of biosphere reserves.

**Risk Management**

Overall, the greatest risks to this plan are those recognised in the University’s risk register, namely the underinvestment in systems development and the need to ensure that the infrastructure is in keeping with that expected of a leading global university. Each individual business case in Appendix 1 sets out the risk associated with the option being recommended.

The second area of greatest risk is that associated with the JISC funded services as it is clear that JISC will reduce funding in future years. At present the IS Management Accountant is working with the Divisions concerned to quantify the likely impact on the University.