

10. Appendix 1 – Mapping the IT vision on to Loughborough 2016 themes

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10.1 Research

- Staff Portal enabling seamless access to the institutional repository, publications database and Personal Research Plan (PRP) tracking system
 - Merging the current publications database and repository to ensure maximum on-line impact and exposure for Loughborough research, with a positive effect on citation indices
 - Linking this to a new on-line Personal Research Plan (PRP) tracking system, to provide comprehensive information on grant applications and awards, referencing these to personal targets
 - Eventually linking through into RACEII research costings etc. and Agresso
- High Performance Computing (HPC) and High Throughput Computing (HTC)
 - Develop University-level super-computer/cluster as flagship HPC service, including sustainable funding model
 - Utilise unused processing power on student and staff PCs to deliver University-wide 'Condor' HTC virtual supercomputer at low cost, to complement the cluster service
 - Develop associated staff training activities and support networks
- Data analysis tools on the desktop
 - Continue to provide and support range of specialist data analysis tools as part of University software service, in line with research needs
 - Provide a Linux desktop service targeted at researchers, to complement the PC and Mac services
- Virtual research collaboration and middleware
 - Register Loughborough research resources including on UK National Grid Service (NGS) and Enabling Grids for E-Science (EGEE) as appropriate, allowing easier set-up of virtual research collaborations
 - Facilitate and support other NGS and EGEE services as resources allow
 - Provide a collaborative Virtual Research Environment (VRE) via the Staff Portal
- Internetworking
 - By continuing to take an active role in the EMMAN regional network, ensure continued high speed standard data connection through to JANET and the rest of Internet
 - In addition to the above, deliver dedicated 1GB eResearch optical network pipe via EMMAN and JANET

10.2 Education

- Web-based Student Portal enabling personalisation of the on-line learning experience, course administration and social interactions, usable on the full spectrum of user devices including phones
 - Integrating key learning systems such as Portal, Perception Computer-Based Assessment, Coursework Submission, Plagiarism Detection, eJournals, etc.
 - On-line module information, option selection, module and programme feedback, transcripts, etc.
 - Student email, groupware, calendaring and messaging service
 - Personalised Links through to appropriate sections of social networking Web sites, e.g. Facebook
 - Primary purpose to support campus-based blended learning, but system easily adaptable to flexible and distance learning contexts

- Loughborough University Student Information (LUSI)
 - In-house student record system highly tailored to local needs and contexts
 - Example of good practice in programme and project management

- Working with the Head of eLearning and other key stakeholders to champion good practice and assist delivery of eLearning Strategy
 - Facilitating access by academics to a flexible set of IT tools and environments that can be integrated with central systems for a seamless student experience, including social networking Web sites, and virtual second worlds
 - Participation in and scaling up of projects developing new modes and channels of blended University learning, including student phones and other portable devices
 - Developing resources allowing lecturers to record and stream video of their own lectures and presentations
 - Enabling wide dissemination of niche-based good practice around the University, enabling like-minded academic practitioners to join up their thinking and share experience

- High quality University-provided student workstation facilities for lab teaching, open access usage, and assessment
 - Modern PC and Mac hardware and core software, allowing students to gain transferable skills on the latest platforms
 - Macs allowing industry-standard experience and learning on specialist multimedia packages
 - 24x7 access provided to meet emerging need
 - Rooms set up for presentation practice and group work, with networked access and projection systems

- Comprehensive on-line library of specialist academic software applications
 - Mapping student PCs firmly on to the core business of academic teaching
 - Available in any location to ensure user convenience and optimum use of workstation fleet
 - New service to deliver specialist academic software via the Internet any time, any place, anywhere (remote desktop), including student digs and overseas (where software licences permit)

- Sophisticated data gathering to aid the academic planning process
 - Workstation room usage statistics ensuring academic needs met and optimum resource provisioning
 - Detailed software application usage statistics, allowing informed software licence purchasing choices at the centre and in Faculties

- Enterprise support for Computer Aided Assessment (CAA) and Optical Mark Recognition (OMR)
 - Seek funding and a location for a dedicated computer examination suite (with movable partitions so it can also be used for open access and scheduled large group teaching) for use in formal end-of-module summative objective assessments, leading to savings of 1000s of hours in academic marking time
 - Integrate the CAA system even more strongly with LUSI allowing instant downloading of class lists, uploading of marks etc.
 - Work with colleagues in Academic Registry and Faculties to amend academic regulations as necessary to allow the use in formal assessments as above
 - Continue to support the current OMR system when CAA is not appropriate, but in a scalable manner that does not draw disproportionately on administrative staff time

- Training and documentation
 - Effective user training and raising staff and student skills will continue to be the single most effective tool to ensure best use of, and maximum return on, University IT investment
 - Raising staff IT skills across the institution, ensuring maximum return on University IT investment
 - Working with Human Resources, the familiar two or three-hour training course format for those who are comfortable with it, complemented by growing use of bite-sized, self-paced and on-line flexible training packages for those who prefer that approach
 - Providing indirect support for student IT skills, via document packs which may be taken and customised by academic and other staff in Faculties and support services

10.3 Enterprise

- Build on our 10 year experience of providing IT services to over 60 external organisations, mainly start-ups and University spin-off companies
 - Provide tailored IT desktop, ISP and communication services, including telephony, server hosting, etc. at realistic and keenly priced market rates commercial rates
 - Provide associated support and consultancy options, at rates as above
- Developing a Customer Relationship Management (CRM) system, tracking benefits and leads across all University business engagement activities
- Revamping the existing Web-based Directory of Expertise to assist those external stakeholders wishing to approach the University for consultancy etc.
- Third stream access to JANET
 - Continue to lobby nationally that, as third stream activity is part of every University's mission, appropriate direct access to the JANET academic network from third stream activities should be permitted
- Sharing our own expertise
 - IT Services has over 10 years experience of providing expert IT advice to the HE and FE community under a series of JISC and JANET contracts
 - We will add to this by looking for possible commercial outlets where these fit well with our expertise and future University plans

10.4 Sport and the Arts

- Sport
 - Working with Sports Development, arranging for video streaming of key sporting fixtures (e.g. Real Varsity Match rugby streaming), bringing them to a wider audience, including alumni, students away from campus, and potential benefactors
 - Working with Sports Development and the Development and Alumni Relations Office (DARO), encouraging sponsorship and philanthropic giving from our major IT suppliers to sports clubs (e.g. Logicalis plc sponsorship of Loughborough Rugby) – ICT providers typically have strong links and interests with sport, so this should be a fruitful line to pursue
 - Make an active contribution to providing a rich ICT environment for any team/teams hosted at Loughborough in the run-up to the 2012 Olympics

- Arts
 - Working with the Director of Arts to provide support for on-line exhibitions (e.g. student protest screensaver) and similar virtual artistic endeavours
 - Working with Departments in the Faculty of SSH to create a virtual art installation and exhibition space, and working with the Library to see this properly referenced via the Publications Database and University Repository

10.5 The Loughborough Student Experience

- Joined-up support and services for student-owned laptops and phones (which are assumed to support the functionality of Personal Digital Assistants (PDAs), plus video, instant messaging, email, groupware, calendaring and Web browsing capabilities)
 - Providing a pervasive wireless network, and plug-and-go facilities across all University locations to meet student demand
 - Providing direct fibre-speed (i.e. faster than standard broadband or wireless) Internet access within all University Halls of Residence ('Premium' HallNet), with value-added services such as TV channels (including international) and cheap Internet telephony and video call bundles (including international)
 - Working with the local council and mobile phone providers and ISPs as appropriate to provide a University wireless network service to the main student residential areas (Community HallNet); while this will not be as fast or richly featured as the full HallNet service, and will not feature the same value-added services, it will still serve to enhance the experience of students not in hall
 - Developing the HallNet brand further, by working with imago to provide an on-site student one-stop PC and Phone shop, including lease arrangements (in conjunction with Abbey Santander if appropriate) to spread the cost of payment, maintenance, repairs, advice and support, beating the high street price, and giving suitable advice on overseas tariffs etc. to international students
 - Advising Faculties on setting up bursary schemes etc. allowing eligible students to more easily fund their own PCs etc.

- Web 2.0 technologies
 - Embracing technologies such as social networking Web sites, mash-ups and virtual worlds, and investigating how we can link and integrate these via the Student Portal to enhance the student experience
 - Regular 'Web 2.0 Watch' briefing for managerial and pastoral staff, tracking the University's presence on social networking sites such as Facebook, virtual worlds such as Second Life, etc., and reflecting on this in terms of the impression the University and Students' Union wish to give to the rest of the world
 - Working with the Pastoral Team including the Community Wardens to promoting appropriate use and positive messages about the University via social networking Web sites
 - Being ready to react swiftly, and inform the pastoral and community warden teams as soon as possible, where we become aware of any particular incidents or flare-ups occurring on external Web 2.0 that risk the University's reputation

- Further student eAdmin
 - Self-Service facilities via the Student Portal providing quick and easy access to view student account, maintain personal details e.g. addresses and view personal teaching timetable
 - For applicants, the ability to track application and access to information
 - For past students the facility to request copies of official documentation e.g. transcripts
 - Appropriate follow up on enquiries from potential applicants through improved system for enquiry handling
 - Comprehensive ePayment facilities, allowing for secure on-line payment and purchase of a wide variety of items and 'charging-up' on-line payment accounts
 - Combined University Smart Card for student ID, access, library, cash card, etc.

10.6 Social Impact and Engagement

- Work with stakeholders including Community Wardens, the Wider Pastoral Team, and Marketing and PR, to create an on-line 'Community Portal' to emphasise the huge positive dimensions of living close to a University, while providing the information residents may need should they perceive any issues
- As noted in the previous section, produce a regular Web 2.0 Watch briefing for University staff, which will aim to pick up any issues which may not be helpful in terms of cordial community relations

10.7 Human Resource Management

- Support for flexible and home working, as in 10.14 below
- As noted under Education above, continue to work closely with Professional Development colleagues to develop a rich and relevant programme of user training as the single, proven most effective way to maximise the return on our investment in IT
- Continue to provide a stable and fit-for-purpose Human Resource and Payroll information system (Trent) to support this area
- Equality and diversity
 - A commitment to promoting equality and diversity and meeting the needs of diverse users is mainstreamed through all University IT planning and provision
 - On student PCs and Macs, providing full services for international students, including the widest possible support for international languages and fonts
 - IT provision and processes which ensure that we fully meet our anticipatory duty for disabled students
 - IT provision which is able to provide reasonable adjustments for disabled staff and students
 - Appropriate sharing through the Staff Portal and LUSI of disability and additional needs information
- Professional capability development within IT Services
 - As a service, we recognise that our own IT staff are our greatest asset
 - We wish to invest in appropriate training and development to maximise our potential, including taking full advantage of the University's reward and sponsorship schemes, to keep our staff's knowledge up to date and fit for purpose
 - We will use appraisal as a key tool for personal development and exploring how individuals' roles support overall University objectives: staff of all grades, whether formally covered by the University appraisal scheme or not, will be offered an annual appraisal-like experience by their line manager
 - We will set up a Professional Development forum for Team Managers and other staff to develop their professional base; and a job-shadowing scheme for junior members of staff to experience a wider range of roles, to inform their career development
 - We will encourage networking and other informal means of communication to build mutually-beneficial relationships etc.
 - We wish to employ best practice in using IT to enhance the work-life balance etc. of our own staff, as an exemplar for the University

10.8 Financial Sustainability

- Finance information systems
 - We will continue to work closely with Finance to support associated corporate information systems (e.g. Agresso, Albacs, Barclays, D.Cal, ePayments, InTend, etc.)
- ePayments system, allowing Web-based charge card and credit card transactions to all areas of the University, linked seamlessly to Agresso
- Value For Money
 - We will employ robust procurement procedures in key projects, under the advice and scrutiny of the University Purchasing Officer
 - Where appropriate we will undertake mini-tender processes within national HE framework agreements
 - Otherwise we will undertake full OJEU processes for all procurements above the OJEU threshold
 - With external input, we will undertake a Total Cost of Ownership (TCO) analysis of all IT usage across the University, providing a sound financial information basis for informed resourcing decisions both in the centre and in Faculties
 - We will feed TCO figures into appropriate resourcing models e.g. TRAC, RASCAL, and also see that the grand total TCO is fed into appropriate national league table compilations for IT spending, ensuring that our 'score' in this context is maximised
 - We will compare our TCO with benchmarks within the sector and beyond to demonstrate quality service delivery at controlled cost
 - We will seek external philanthropy funding from our IT suppliers for work which is potentially ground-breaking within the sector
- Shared services and co-operation driving efficiency
 - Regionally, we will continue to take a leading role in the East Midlands Metropolitan Area Network (EMMAN), providing Internet access to all HE, FE, and (indirectly) schools in the region
 - Nationally, we will maintain our existing strong role in the JANET academic network, including continuing to host JANET-funded posts in advanced network technology (e.g. wireless, security, etc.)
 - We will continue to take strong participative roles in other relevant regional and national forums, including East Midlands Universities IT Directors (EMUIT), the Universities and Colleges Information Systems Association (UCISA) and the Joint Information Systems Committee of the Funding Councils (JISC)

10.9 Marketing and Communications

- We will work alongside the Web Development Manager and other Marketing & Communications colleagues to introduce Web content management procedures and technology to support, standardise and enhance the University's Web presence, playing a key role in both internal and external marketing of the University
- Working with Academic Registry, Faculties and Marketing, we will deliver a personalised Applicant Portal and associated contacts management system, so cater for the very first contact of a potential student with the University right through to arrival for induction week
- Support for related information systems, including image archive and specialist graphic design services

10.10 Commercial Services

- We will provide an ePayments service linked to Agresso for commercial as well as other customers
- We will continue to provide the 'premium' HallNet service (see Student Experience above) only in University-owned and PFI halls, providing a unique selling point and competitive advantage over all other residential offerings
 - Note that for technical reasons would not be possible to match the 'premium' experience more widely via 'community HallNet'
- We will continue to host the range of small IT systems employed by imago to provide high quality commercial services, including: Access accounts package for Burleigh Court; Kx conference and accommodation management; QPulse document management system; StarChef catering management package; Stocklink stock control software; Tiger call logger software; etc.
 - We will build the required interfaces between these packages and LUSI or Agresso
- We will provide a commercial wireless networking service for non-University members in Burleigh Court and other locations as appropriate
- We will recharge for these services at full economic cost rates as appropriate in line with imago's and other business models, and University policy in this area

10.11 Advancement and Fundraising

- Alumni Portal and associated services for our graduates, providing a basis for the 'friends for life' concept
- Contacts management system to track potential benefactors and others with whom the University wishes to develop strategic relationships
- Continued support for existing related systems, including Raiser's Edge, NetCommunity, etc.

10.12 Estate

- Central timetabling and room booking system
 - Introduce a centralised system that will optimise use of space in the University, in line with local constraints
- IP-enabled 'Smart Buildings'
 - Working closely with Estates colleagues during an extensive building programme
 - Enable modern IP telephony, building management systems, access control systems, CCTV, RFID asset tracking, etc., efficiently, economically and effectively via the IP data network
- Support for other systems including Archibus space management, IMRIS incident management, PAT access control (or replacement), etc.

10.13 Information Services

- Information Strategy
 - Removal of duplication of information held (as far as practicable)
 - Overarching normalised University data architecture
 - Identification of the single, authoritative source of all information, with all other systems either referencing directly that source, or flowing data from it on a frequent, timely basis
 - Capturing information as close as possible to the source
- Close collaboration with the Library in areas of mutual interest
 - eLearning
 - Integrated publications database, repository and Personal Research Plan (PRP) system
 - Student IT facilities
 - Single Sign-On (SSO) technologies
 - Authentication and authorisation services (e.g. Shibboleth)
 - University smart card

10.14 Sustainability and work-life balance

- Services facilitating flexible and home working
 - For staff, a new Remote Working Service based on VPN technology, to enable secure access from anywhere in the world to full desktop and IP telephony services via consumer broadband Internet or equivalent
 - For students, complement Web-based email and Portal access with new service to deliver specialist teaching software remotely to anywhere in the world via the Internet (Remote Desktop)
 - For staff and students, promote appropriate use of modern phone technology for messaging, calendar, contact and email access on the move
- IT power consumption
 - Investigate energy-saving 'thin client' PC desktop solutions where appropriate, particularly in the context of information kiosks, etc.
 - Minimise desktop fleet power consumption by employing so-called 'Wake-On-LAN' technology on PC fleet, to enable PCs to go to sleep in very low power mode when not in use, then be 'woken up' via the network when required, perhaps for critical software updates in the middle of the night; when these are installed, PCs can be centrally sent back to sleep
 - Minimise server power consumption by employing virtualisation technology that only brings server capacity into use when needed
 - Minimise power consumption on both desktops and servers by employing multi-core processor technology, which uses about 75% less power than legacy processor technology
- Video-conferencing
 - Keep records continuing to show financial and carbon benefits of video-conferencing to the University
 - Support the use of Skype and/or other consumer-driven products to facilitate desktop video communication
- Lean print in partnership with Facilities Management
 - Encourage Faculties and central administration to make best use of printing services available to them, promoting the central bulk print service and distributed printer/copier multi-functional devices (MFDs), but discouraging the use of expensive personal printers except where really necessary
 - Provide a print quota and charging system for staff and students that can provide management information to allow informed print choices to be made and savings to be achieved
 - Promote the use of recycled papers etc. throughout the institution
- Smart buildings as under 'Estate' above

10.15 Internationalisation

- Strong support through the HallNet brand and service for international students
 - Survey evidence shows that, in general, overseas students rate quality of Internet access as the most important factor shaping their experience
 - Loughborough's Internet service was recently given top ratings by overseas students in a recent iGraduate survey, and was a factor in the THES Overseas Student Award 2007
 - We need to maintain this high level of satisfaction by:
 - Overseas TV channels and cheap international Internet voice and video call bundles for international students in hall
 - More general advice for international students in terms of phone tariffs etc.

- On student PCs and Macs the widest possible support for international languages and fonts

10.16 Faculty IT

- At University level, we will focus on proving central IT services that have applicability across multiple Faculties

- We will work closely with Faculty IT Co-ordinators (FITCs), and keep awareness of and track IT initiatives organised at Faculty or Department level

- We will provide access from such Faculty systems to central directory services to enable Single Sign On (SSO), giving the potential for a seamless student experience between central and devolved systems

- Where requested, we will assist any Faculty in drawing up its own formal Faculty IT Strategy or Plan, to complement the University IT Strategy

- Where such a request is not made, we will encourage and request that each Faculty completes its own 'IT mini-Strategy' – perhaps comprising of a half a dozen bullet-point objectives for items of IT work within the Faculty to be prioritised at a strategic level

10.17 Support for Management and Administration

- A fit-for-purpose staff desktop providing access to standard office software, collaborative workflow tools, analysis tools, access to email, groupware, calendaring, messaging and the Web, filestore, backup, and client software for corporate systems as appropriate, plus easy access via the Staff Portal
- In partnership with business process owners, we will assist in the re-engineering and improvement of business processes that lend themselves to automation, and implement corporate applications to meet the data capture, processing, and analysis requirements of the support services and academic departments
- Operational, management and executive reports will be readily available and customisable by users at all levels of the organisation to meet their requirements, via a simple dashboard interface on the portal that will allow easy tracking of Key Performance Indicators (KPIs) etc.
- We will develop components of the staff and student portals enabling submission, checking and, where appropriate, amendment of records by the individual concerned. This will lead to greater ownership – and hence accuracy - of the record by the individual themselves and will take away some of the administrative burden within the organisation
- We will seek to improve automation of administrative tasks such as student registration
- The integration between University information systems will be improved: duplicate information sources and systems will be identified and rationalised/normalised; there will be clear ownership of the source of data and well-documented flows of information where data is interfaced with other systems

10.18 Governance

- Strong engagement with Faculties and University via formal and informal channels
 - Termly University-level IT User Groups, feeding particular items of business into EMG and/or Ops as appropriate
 - Programme and Project Management structures
 - Faculty IT Policy Committees as invited
 - Use of stratified focus groups for streamlined consultation on certain new service developments, minimising the time we expect users to put in to assist with these
 - Informal briefings of Vice-Chancellor's Office, Deans, and others throughout the organisation as particular circumstances dictate

- Adoption of industry-standard best practice, tailored to HE context where appropriate
 - ITIL Service Delivery and Service Management
 - PRINCE2 project management and the inception of a Programme and Project Office (PPO)
 - ISO17799 via the UCISA Framework on Data Security
 - Inspection shows we already meet most of these; but their more formal adoption, and use of the common language underpinning them, will make it easier for us to demonstrate to the University that we are doing a good job
 - Whilst adhering to the above, we will be mindful of the sometimes disproportionate workload in obtaining formal accreditation

- IT Service Desk
 - This is central to best-practice delivery as above, for ensuring standards across the whole service, and for giving service based on customer need rather than patronage, local knowledge, or standing in the organisation
 - In line with ITIL, we will make the Service Desk a first line of enquiry for all users, staff and students, though subsequently different categories of users may be referred and escalated via different routes
 - Provide an on-line system for users to track their queries
 - Continue to improve the first line fix rate at the Service Desk beyond its current level of 60% for IT incidents
 - Provide relevant statistical information both to IT managers and to users, to demonstrate quality of service and allow IT problems to be identified and tackled
 - Respond positively to any requests from Faculty IT or other support services to use the IT Service Desk as their first point of contact and conduit for query escalation and tracking

- Internal Audit
 - We have been audited approximately every other year in the recent past, and we will continue to welcome this degree of scrutiny as further reassurance to the University that we are doing a good job

- Storage, archiving and data retention
 - Be pro-active in assisting the University in defining its data storage, archiving and retention policies, particularly as they apply to electronic data storage media
 - Deliver a central storage and archiving infrastructure that complies with these policies
 - Work with individual areas of the administration, at the centre and in Faculties, to ensure best practice in the storage and backing up of core corporate data entered into non-core systems (e.g. local Faculty databases, other small systems, etc.)

10.19 Business Continuity

- Service availability
 - Based on user requirement for our services to be available 24x7, all year round, we will aim to deliver 99.99% availability in key applications, and 99.999% availability in the network core
 - Subject to funding, we will employ virtualisation and clustering technology to deliver this availability whilst minimising the power consumption and carbon footprint of hardware, in line with best industry practice

- Disaster Recovery Planning
 - We will work closely with other support services to produce an overarching IT Disaster Recovery Plan linked as appropriate to the emerging University Business Continuity Framework
 - To meet University need, we will continue to arrange core services and data across two machine rooms, and employ virtualisation technology where appropriate, to reduce our disaster recovery time

10.20 Technology

- Technology to underpin personalised portals
 - Identity Management system, linked to and integrating data from core corporate systems and other authoritative data sources, defining each individual's identity (i.e. multiple roles and relationships) within the University, e.g. membership of departments, research groups, programme, modules, clubs & societies, courses applied for, alumni details, etc. etc.
 - Secure Directory Service containing usernames, passwords, personal details, and group memberships as determined by the Identity Management system
 - Single Sign-On (SSO) framework giving seamless access across multiple systems (including core corporate) from a single username and password, and taking a pragmatic approach to adoption of relevant interoperability standards
 - Portal personalisation engine, seamlessly and securely integrating personalised information from a diverse range of data sources and underlying information systems, and presenting to the user via a Web interface
 - All leading to myLoughborough single personalised portal

- Technology to deliver high availability 24x7 IT services
 - Standardised server and storage virtualisation platforms
 - Investigation of virtualised Disaster Recovery 'shared service' facility with EMMAN partners

- Technology to deliver energy and carbon savings
 - Server blade arrays and intelligent enterprise storage
 - In-rack cooled data centre solutions

- Taking a national HE sector lead in technological and associated areas of expertise, including
 - Network security
 - Wireless networking
 - SSO
 - Legal compliance and policy development