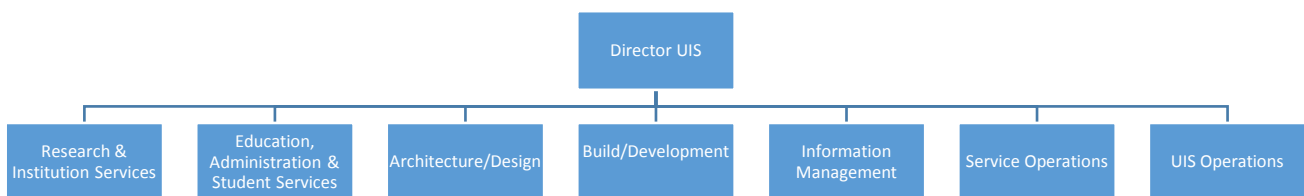


How UIS organisation design will enable user engagement

This paper outlines the new UIS divisional structure, and how this will facilitate user engagement, and proposed methods of collecting and processing user feedback.

1 New divisional structure

At its October meeting the ISC endorsed plans for UIS to be restructured with a seven-division model detailed in Section 4 of the attached Appendix A (ISC 18) and outlined in the organisation chart below. In section 4.1 the paper defined the roles of *Relationship Managers* and *Service Owners* and how these support the aims of UIS to engage more widely with users.



1.1 User engagement by division

The forms of user engagement facilitated by the new structure are outlined in the following list:

- **Research & Institution Services**
 - Working with individual institutions to understand their priorities
 - Providing influence in the development of institutions' own platforms in the provision of education and administrative services
 - Supporting institution-specific services within a common framework to facilitate sharing of services where practical
- **Education, Administration & Student Services**
 - Facilitating the commissioning of IT in institutions, estates, finance etc.
 - Ensuring that services meet the needs of institutions and provide a coherent platform across the University
- **Architecture/Design**
 - Advising on the development of an integrated and modular suite of services that form a coherent platform
- **Build/Development**
 - Provide a focus for usability and user centric design
- **Service Operations**
 - Ensuring services are delivered within bounds of Service Level Agreements (SLAs)
 - Ensuring that usability is achieved

2 The role of Relationship Managers

Within the Research & Institution Services division, Relationship Managers will make the needs of the user communities central for UIS, and support integration of initiatives around strategic themes through regular partnership meetings with all parts of the university. These meetings would cover the range of strategic, new initiative, and operational service topics.

Relationship Managers are envisaged to be senior managers who will engage with each user community on a regular basis covering (at different intervals) the rolling 2 to 3 year business and IT enablement strategy, the 3 to 6 month project delivery plan, and ongoing operational requirements (such as service hours and response times).

3 The role of Service Owners

Service Owners within UIS would work with Relationship Managers to ensure responsiveness in current services and strive for continuous improvement:

- Providing coherence from input and feedback from different divisions
- Engaging with end users to gain input and ensure that delivered services are satisfactory

Service Owners are accountable to the Relationship Managers for ensuring that their service(s) meet the needs and expectations of user communities.

4 UIS process for gathering and responding to feedback

The following subsections provide a draft outline of the proposed process of gathering and responding to feedback for service provision by UIS.

4.1 Ongoing surveying of user opinion

Plan to determine a baseline of user perception of services by sampling, via survey, a statistically valid subset of users each month.

4.2 Engagement with Service Owners

Ongoing dialogue with end users will be used to gain input on future service design and to evaluate evaluation satisfactory performance.

4.3 Oversight of feedback review

To ensure that feedback receives appropriate scrutiny the following oversight is suggested:

4.3.1 New UIS management structure

The new UIS leadership team will provide a monthly review of feedback received to ensure appropriate action is taken within department.

4.3.2 User Needs Committee oversight

To maintain oversight of feedback and actions being taken to ensure issues are being tracked and handled in appropriate ways.

5 User panels

The Higher Education Data & Information Improvement Programme (HEPIIP) had established an Advisory Panel¹ to form a network of professional representatives from major stakeholder communities. The panel acts as a quality assurance body to advise the programme management office on the planning and delivery of projects. Members of the panel sit on individual project boards, providing guidance through technical and logistics oversight.

A similar approach might be implemented across the University to provide appropriate input and oversight of development activities.

¹ <http://www.hediip.ac.uk/hediip-advisory-panel/>

Information Services for Cambridge – developing the strategy and UIS organisation: October update

1.0 Introduction

This paper seeks to convey to the ISC progress made on the organisational development of UIS. It additionally asks the ISC to note the outlined proposal and support the release of Transition Funding to enable implementation. The planning assumption used in the paper is that the capacity of UIS to undertake projects and sustain operations is held broadly constant. The ISC is asked to note that there are indications of a significant increase in demand for IT services (new initiatives) and it is likely that as business cases are developed there will be separate cases for increasing capacity. The figures presented in this paper do not allow for any capacity increase.

2.0 Progress to date

As part of the plan to deliver the UIS organisation, the ISC signed off a number of activities in July. The progress against these activities is documented below.

Teams to reach provisional conclusions for presentation/review (June 30)	Complete
Further engagement meetings with schools and with UIS full team (during July)	Complete
Workstrands finalise recommendations (July 31)	Complete
Proposed UIS senior management structure planned (August/September)	Complete

3.0 Developing the proposed organisational model

The seven workstrands, comprising of over 80 volunteers from within UIS, as well as from the wider University, delivered their draft reports on 31 July. These have been made available both as written reports and in a summarised version to colleagues from across the University for comment prior to finalisation in October. They were also shared with Gartner for additional scrutiny from the perspective of global best practice in IT delivery.

The reports concluded with recommendations on the objectives that UIS should deliver, and the organisational entities that would need to be in place in order to deliver these objectives. The list of objectives proposed by each workstrand can be found in annex A.

These individual workstrand recommendations, together with the comments collected from across the University, were reviewed by the UIS Interim Leadership Team to check for consistency, and develop options for an operating model and top-tier structure that would meet the strategic requirements of the University as outlined by the ISC, and the requirements of the IT Review (see annexes B and C respectively for summaries).

The outputs of this work, undertaken in a two-day workshop, were then further tested with Gartner and a number of senior stakeholders from across the University. In addition, they have been shared with colleagues in the UIS for their feedback.

3.1 Internal UIS Feedback

There have been 48 individual comments across the 7 workstrands. Many of the comments were made from a perspective of clarification on specific points, or adding commentary generally in support of the conclusions within the reports.

There has been particularly strong endorsement of recommendations relating to career and professional development for the IT Practitioner community. A summary of this feedback can be found in annex D.

3.2 Feedback from the Collegiate University

Commentary has centred on the themes of user engagement, and the need to be user focused in service design and provision; innovation; governance and career and professional development for the IT practitioner community. Generally these comments were again seeking further clarity on the detail of how the model would work in practice, and endorsing the objectives developed through the workstrands. Annex E provides further detail.

3.3 External feedback on alternative structures

A workshop with Gartner analysts identified additional structures for consideration and evaluation based on what was currently being used in various organisations around the world. These options included a more devolved model, outsourcing and a model that added a layer of management through the creation of a Chief Technology Officer. The Interim Leadership team discussed these options and used the insights gained to further refine the way forwards set out in this paper.

3.4 Strategic Initiatives

In parallel with and informing the organisational design work, reflection on the strategic steer provided by the ISC and derived from the IT Review has resulted in the identification of new initiatives to be progressed by the UIS organisation

- Research Services
- Educational Services
- Student Experience
- IT support for Estates
- IT Infrastructure consolidation
- Common End-User Compute Platform (aka Desktop)
- Enterprise systems strategy (CamSIS, CUFS, CHRIS in scope)

These initiatives will require additional capacity. Descriptions of each can be found in annex F, with terms of reference to come to the ISC in due course.

4.0 Proposed organisational model

The proposed model has been designed with the future aim of delivering the following objectives for the University:

Users: users recognise progressive improvement in relevance, usability, completeness, integration and coherence of information services. This will mean that:

- students benefit from a progressively complete and cohesive user experience, from application, through time at University to graduation and transition to alumnus

- staff experience that systems are more usable, and consistent across their various roles
- educators have a wider range of IS enablers to support teaching
- researchers are able to use a wider range of tools and data assets to initiate and undertake research projects
- everyone benefits from the full transition into the mobile compute era

Institutions: institutions are engaged in regular dialogue on strategy, delivery and service improvement, resulting in increased choice and flexibility, and improved performance. This will mean that:

- colleges (and other parts of the University) find it is easier to find and reuse services introduced by others, and that the cost of introducing new services is reducing
- UAS sees greater coherence in systems commissioned from different areas, with consistent and coherent use of information across the University
- finance managers notice reduced costs for common services, resulting from both increased organisational efficiency and shared infrastructure and end-user computing platforms

Community: IT practitioner capability is proactively developed at the individual and community levels

Services (innovation, identification of external services, and reuse):

- The University benefits from a wider range of services and digital information assets
- Services remain relevant, up-to-date and cost-effective.
- Services created by one institution may be scaled, shared and reused by others (with appropriate data segregation)

Security: improved risk management via active management of cyber security and information handling related risks

Efficiency: improved efficiency and effectiveness achieved by reuse, and consolidating recurring functions and sharing best practice

In turn, there are a number of requirements to ensure that UIS is able to achieve these outcomes. These are:

- The extension of UIS's ability to develop relationships and capture requirements from all areas of the University
- The reduction of duplication and inconsistency
- The clear ownership of services and consistent management of those services
- An investment in building IT practitioner capability and community
- The establishment of centres of excellence in user design, IT architecture, information management, development and services operations

Structurally, the response developed as a consequence of these insights centre on the creation of seven units that have working titles as follows:

- Research and Institutional Services

- Education, Administration and Student Services
- Architecture/Design
- Build/Development (including user design centre of excellence)
- Information Management
- Service Operations
- UIS Operations

A description of each of these units can be found in annex G.

4.1 How the structure would function

In practice, *Relationship Managers*¹ based in Research and Institutional Services and Education, Administration and Student Services would develop the relationship needed to focus on delivering the needs of the user communities. Integration of initiatives around strategic themes would be facilitated through regular partnership meetings with all parts of the University. These meetings would cover strategic, new initiative delivery, and operational service topics. *Service Owners*² within UIS would work with Relationship Managers to ensure services remained up to date, relevant and competitive, and to ensure responsiveness to user requests.

A *services catalogue and portfolio* approach has also been identified as a necessary requirement. This would be managed by the Relationship Managers to ensure that user communities would have clear line of sight to those services that address their needs. Service Managers would ensure that individual service descriptions are complete and up to date. This approach should enable both the empowerment of institutions own systems development, through federated offerings that can be configured to meet local needs, and the option for end-to-end solutions to be provided by UIS. It should also enable the UIS to overcome one current criticism that prospective users of services often discover them “by word of mouth”.

Co-ordinated development of services, informed by the Architecture/Design unit and Information Management unit, when combined with this catalogue and portfolio approach should enable the University to access benefits of flexibility, responsiveness, creativity and innovation within a financially sustainable cost model. The Architecture/Design unit will also ensure that higher education sector shared services and cloud computing options are considered where appropriate.

The Development and Service Operations Units would create and deliver services, respectively within this wider framework, whilst the UIS Operations serves to provide internal governance and an additional level of cohesion.

UIS Operations also provides the enablers for cultural cohesion, delivering the services that enable UIS to act as a hub for professional development and networking. By doing so, IT professionals from around the Collegiate University will have access to peer learning, development opportunities and

¹ Relationship Managers are envisaged to be senior managers who will engage with each user community on a regular basis covering (at different intervals) the rolling 2 to 3 year business and IT enablement strategy, the 3 to 6 month project delivery plan, and ongoing operational requirements (such as service hours and response times).

² Service Owners are accountable to the Relationship Managers for ensuring that their service(s) meet the needs and expectations of user communities.

training offerings to make the most of services in their context and to generally support the identification of useful new initiatives in IT.

5.0 Implementation Plan

The structure of the implementation plan is to approach the organisational change in two phases. The first phase is to put in place the senior management team and to align the existing teams to the newly defined units.

The second phase comprises of that senior management team reshaping their units to achieve the objectives highlighted through the workstrand reports. This activity will be coordinated across the UIS to ensure that the overall level of change is managed in a way that ensures that avoids a drop in service provision or delivery of new services. It is anticipated that this phase will start from March 2015 and run for a minimum of eighteen months.

The phase one milestones have been listed below:

Formal consultation commences with impacted individuals	w/c 22 September
Proposed PD33s (job descriptions) for new top-tier roles available for formal consultation purposes	6 October
ISC feedback received on proposed structure	9 October
Earliest conclusion to formal consultation	7 November
Existing leadership team appointments confirmed, and outstanding vacancies identified	7 November
Earliest start date for recruitment to senior vacancies	10 November
Target “go-live” on new leadership team	March 2015

Dates are contingent upon the formal consultation process and may slip dependent upon any additional work that may be required in order to complete this task fully.

The activities here are underpinned by a full communications plan for staff that centres on monthly staff meetings, weekly team briefings and an Internal UIS staff newsletter. Additionally, staff have multiple ways of bringing their comments and suggestions forward through the meetings already mentioned, a dedicated email address, suggestion boxes, the IT Forum, and the UIS Staff Wiki. Following the recommendation from the last ISC, resource has been secured on a contract basis to actively manage these processes, whilst the Interim Leadership Team continues to lead the overall change project.

Finally in this section, it should be noted that whilst preliminary feedback from Deloitte on a recent audit acknowledges the relatively fast progress made to date, they also highlighted that they did not consider this approach to be sustainable beyond 2014. Initial change work has been completed at a relatively quiet time of year for the UIS, but with the academic year starting again, and the increase in complexity that comes from transitioning between structures, they strongly recommended investment in change management, risk management, more formal governance, and internal and external communications. This would include the development of more detailed project plan and risk management approach with a three year time horizon.

6.0 Financial Impact of the proposal

It is anticipated that *phase one* of the implementation will therefore require investment in the following areas:

New Section Heads: If the proposed structure is endorsed, then the roles to head each unit are expected to be assessed at grade 12. Excluding the director, UIS currently has five posts at this level, leaving a requirement to create a further two. Four recruitments will be required as two posts are vacant.

Change management support: The securing of additional project management and change management resource on a contract basis in order to meet the enhanced requirements in this area, as highlighted by the recommendations of the Deloitte audit.

Pilot Project: It is proposed to initiate joint working with one or more schools in order to test the new way of working with the schools and departments, and enable the service catalogue approach be trialled and refined prior to full adoption.

It is proposed that this be funded through a mix of the £1.2m Transition Fund already allocated to UIS, and savings realised through the management of attrition. This should make the model viable, and lay the foundations for the phase two changes (assuming UIS capacity remains stable over the medium term). Annex H outlines the financial model that underpins the proposition, and shows that these roles would be fully funded by UIS efficiency savings from 17/18, with a total drawdown from the Transition Fund of c.£900k across the years 14/15, 15/16, and 16/17.

Phase two of the proposals currently assumes that there will be a requirement for further investment in headcount as outlined below. The initial numbers to enable the objectives identified in the workstrand reports came to 35. However in recognition of affordability the initial numbers thought necessary to get the model running have been reduced to 20 including the Section Heads already mentioned. These numbers are outlined below, and will be reviewed as part of the phase two development work undertaken from March 2015.

Area	Number
Architecture	3
Build/Development	2
Information Management	2
Career Development	1
Research Services	2
Institutional Support	3
Relationship Management	3
Total	16

It should be noted that the additional 3 posts for relationship management will bring total UIS resource in this area to 5FTE. It is believed that this enable the validation of the engagement model designed to interact with over 200 University institutions. More resource may subsequently need to be added.

By making this investment in capability it is assumed that there will be a commensurate improvement in outcomes that will be realisable within a two-to-four year period. Given that the University has made commitments about there being no redundancies as a result of the integration, financial benefits of the change are most likely to be realised through management of staff turnover. Current forecasts suggest that UIS will return to the 2014-15 run-rate within seven years on this basis.

7.0 Risks and Constraints

Whilst a number of risks and constraints have been identified in the past, and continue to be managed, the following new risks are being actively managed at this point in the process:

1. There is a risk that the level of change may result in a fall in quality or pace with respect to the development of new services and the provision of existing services.

By ensuring that project management disciplines are applied, and project resources added where needed, in conjunction with improved internal reporting mechanisms, the leadership team will keep the change load at a level to protect service and mitigate against staff fatigue.

2. There is a risk that, despite going as fast as possible, the prolonged nature of the change process may lead to fatigue amongst staff in UIS and a fall in motivation.

This is being managed by means of a full communication and engagement programme being reviewed at leadership team level.

3. There is a risk that we may not be able to persuade staff in the UIS that the proposed course of action is an improvement for all constituents, leading to a fall in motivation.

This, too, is being managed by means of a full communication and engagement programme being reviewed at leadership team level.

4. There is a risk that in undertaking transition activities to the new structure, UIS may fail to maintain the current broad engagement with the wider University.

This will be mitigated by the development and maintenance of plans to ensure that regular updates are provided, and feedback sought from outside UIS.

8.0 Summary

In summary these proposals are aimed at ensuring that:

- students benefit from a progressively complete and cohesive user experience, from application, through time at University to graduation and transition to alumnus
- staff experience that systems are more usable, and consistent across their various roles
- educators have a wider range of IS enablers to support teaching
- researchers are able to use a wider range of tools and data assets to initiate and undertake research projects
- colleges (and other parts of the University) find it is easier to find and reuse services introduced by others, and that the cost of introducing new services is reducing
- UAS sees greater coherence in systems commissioned from different areas, with consistent and coherent use of information across the University
- finance managers notice reduced costs for common services, resulting from both increased organisational efficiency and shared infrastructure and end-user computing platforms
- everyone benefits from the full transition into the mobile compute era

9.0 Recommendations

The ISC is invited to endorse the recommended operational model. It is further, specifically, asked to support the phase one deployment plan, including recruitment.

Dr M.C. Bellamy

E.J. Webster

2 October 2014

Annex A: Objectives by Workstrand

WS1	UIS Services and Engagement
A	Regular consultation with all institutions comprising the collegiate university
B	UIS service provision and strategy informed by user feedback and requirements
C	Service Catalogue - Put in place a multi-level definition of the services available to user communities, accessible by role, institution and activity
D	Service Portfolio - Put in place a Service Portfolio framework to underpin service commissioning, maintenance and retirement
E	Increased benefits through adoption of services from inclusive catalogue
F	Continue to maintain the three current UIS Desktop Services in line with the emerging Desktop Strategy and unify the associated support provision.
G	Engage with other Desktop Services providers within the University.
H	Develop and formalise strategic end-user computing implementation roadmap . Once agreed, design, procure and build the new “Desktop” service(s).
WS2	Community and Capability
A	That the UIS work with the Schools and Colleges to help ensure that suitable IT governance structures are in place to oversee the interaction with UIS and that appropriate coordination arrangements exist, including School IT Coordinators to meet the dual requirements of School IT coordination and UIS engagement
B	The UIS should work with the Schools to determine the terms of reference for a cross School IT Committee
C	The UIS will produce a catalogue of federated services and form a proactive engagement team to provide a customer focused account management function associated with federated service delivery to Departments & Institutions across the collegiate university
D	The UIS will increase the resourcing of its institutional support team in order to provide effort and expertise to institutions via an on demand model to help cover staff absence and additional requirements arising from project activity etc
E	The UIS will investigate mechanisms to provide assistance with the management of local IT staff where deemed useful by the institution
F	The UIS will increase its support for the creation and promotion of an active and engaged IT practitioner community across the collegiate university
G	The UIS will enable and promote a career development and job mobility programme for IT practitioners across the collegiate university
WS3	UIS Operations
A	Put in place unified policies and procedures necessary to operate a university department formed from the joining of three disparate organisational units. (Scope: HR, Finance, Planning, Comms., H&S, Building Management)
B	Establish appropriate governance structures for the proper regulation and provision of IT , both across the University and within the UIS.
C	Improve the career mobility and flexibility of working for IT staff across the University, via standard role descriptions, career pathways, and facilitated moves

WS4	Architecture
A	Creation of UIS Architecture team with sufficient depth and breadth of knowledge to achieve recommendations of IT review
B	Establishing an architecture community within the wider University
C	Formal governance of common University architecture
D	Catalogue of architectural services consisting of UIS, wider University and approved external offerings.
E	Delivery of technical infrastructure offerings (e.g. Infrastructure as a Service, Platform as a Service, Storage as a Service) that are either used directly or form the basis of wider UIS services.
F	Managed documentation for application components, interfaces and data interchange standards
G	Mechanism for maintaining a list of approved external services
H	Common University directory services , authentication, IT security procedures
WS5	Build
A	A build capability that is optimised to provide highly responsive, high quality Information Systems development services that are both efficient and cost effective.
B	A portfolio of modern, sustainable and supportable IS technologies that enables the UIS Build Capability to deliver efficient and effective services.
C	The implementation of defined methods, standards and processes , covering the full end-to-end development life cycle, that are compliant with industry best practice.
D	To create a challenging, stimulating and rewarding environment that develops and supports all UIS Build Capability staff in the delivery of efficient and effective Information Systems.
E	A UIS Build Capability that is accepted as a trusted partner and has a strong relationship with the wider University IT functions and the communities they support.
WS6	Service Operations
A	We should adopt common processes and the associated tooling (software) across UIS.
B	We should adapt and adopt the ITIL® Service Management Framework across Service Delivery and Operations within UIS.
C	We should consolidate our 1st line support points into a single (functional) Service Desk .
D	We should create Service Level Agreements (SLAs) for all our services so that we are able to define deliverables and measure performance against expectation.
E	We should introduce Operational Level Agreements (OLAs) within UIS so that we are able to define the interdependent relationships among internal groups working to support the SLAs.
F	We should implement common service metrics across all services thus enabling performance to be compared which in turn can help inform where investment is required.
G	We should create a dedicated 2nd line support function .

H	We should rationalise the number of operational machine rooms in line with the University Data Centre policy.
I	The Network Support function should be provided consistently throughout UIS.
J	We should develop our training provision to meet University and user requirements
K	We should rationalise our current Institution Support offerings and then expand to meet growing demand . In parallel we should create enough capacity to be able to service ad hoc requirements .
L	We should rationalise systems where duplication exists (as appropriate) and then undertake to eradicate Technical Debt.
M	We should streamline and converge current User Administration processes and aspire to manage all accounts from one place .
WS7	Information Management
A	The UIS proposes to lead in producing, maintaining, and promoting the use of a comprehensive Information Management Framework throughout the University. It will be done in conjunction with those who already have delegated responsibility in this area e.g. the Library and UAS
B	Act as Information Management Risk Management lead on behalf of the University
C	The UIS will lead in building Information Management networks across the University in order to provide platforms for support and dissemination of information and requirements gathering
D	Lead in identifying and supporting information asset owners and enabling the publication of assets in the University Information Catalogue
E	UIS will provide advice, services, systems and technologies that enable and support the University in the appropriate storage, management, retrieval and sharing of data , in the confidence that it will be held securely.
F	UIS will play a leading role in designing, developing and recommending IT security policies for the University . All such policy proposals will be submitted to the appropriate University bodies for approval and promulgation.
G	UIS will provide domain expertise in the IT sphere for regulatory and information compliance , complementing the work of the University's Information Compliance office. All data will be processed in accordance with the Law, Statutes and Ordinances of the University and the Rules and Guidelines issued by the Information Services Committee.
H	UIS will provide expertise in forensic incident handling so that incidents involving computer data are managed in such a way as to obtain reproducible and verifiable results that can be relied upon in a legal setting, including internal HR investigations through to a court action.
I	All UIS services are operated in accordance with the Law, Statutes and Ordinances of the University and the Rules and Guidelines issued by the Information Services Committee . Where personal data is processed we make clear what information is held, for how long, who may access it and for what it is used.

J	UIS in conjunction with others will develop a catalogue of key data sources to facilitate and encourage collaboration in teaching, research, and administration across the wider university . This asset will assist and inform the University's approaches to risk management and support the development activities of Workstrand 4 in building an information architecture.
K	Everyone is responsible for information security and ensuring that any processing of data is done in accordance with the law, the Statutes and Ordinances of the University, and the Rules and Guidelines of the ISC. The University will provide appropriate training to ensure that they are equipped to fulfil their obligations in this area.
L	Develop mechanisms for feeding back into UIS after engagement activities

Annex B: ISC Strategic Steer

- To establish an IT leadership position to enable world class excellence in the areas of research, teaching and learning, and the end-to-end student experience
- To seek best in class process and efficiency outcomes in other areas
- To ensure close engagement with whole Collegiate University
- To sustain delivery of existing projects and services

Annex C: IT Review Summary

1. That a focus on user needs should underpin IT organisation, strategy, governance, and the creation of intuitive user interfaces.
2. In addition to the creation of the new Information Systems Committee (ISC) to provide overall governance, subcommittees should be established for research, teaching and learning and business systems, as well as a user forum.
3. A modular approach to IS development should be introduced, based on common architecture and publically, clearly documented interfaces.
4. A pan Cambridge IT community should be built, with career development and career management. This requires an engagement programme with the broader community, including Schools IT coordinators and Colleges IT committees.
5. Access to minimum standard desktop services (via desktop systems, Bring Your Own Device, and mobile devices) should be available to all staff and all students. However, this is not to involve a "one size fits all" approach.

Annex D: Summary of feedback from within the UIS

Workstrand 1	<ul style="list-style-type: none"> • We should think carefully how to apply ITIL and construct a service catalogue - making the process too extensive or complex will mean the entries are less likely to be filled in correctly and also users are unlikely to read long entries. • We have considerable experience with information classification and searching, and it is far better to classify information by area (such as 'courses'), with a simple but intelligent text search (or 'help system'). • Do we have enough manpower resources? • Have we properly defined the needs of our stakeholders, customers, users and others? • We should introduce an institutional partnership model like HR. • Is there a potential for overlap/duplication and, quite possibly, conflict here with the University IT Community. • Essentially there are three underlying hardware types desktop PC, Mac & Laptop. Standardising on the hardware and OS (including antivirus, office suite) for new deployments can be done in a few months and start to deliver value.
Workstrand 2	<ul style="list-style-type: none"> • Communications: there should be a mechanism similar to the current news service that communicates technical information out to users. • Road shows into departments would be a good way of taking our story to them and engaging them directly. • Who would support local applications – UIS, School IT? Would such systems be listed and supported in our catalogue? • Will resources (i.e. money and staff) will be made available by the University? • Please can everyone have the chance to apply for any new positions?
Workstrand 3	<ul style="list-style-type: none"> • There should be mechanisms for staff to expand their roles, and get credit in their grade, without having to apply for new posts. • Surely the academic year version of Oct to September leave year would fit better for our clients, i.e. Schools and Colleges. • Concerns around the staff WIKI as a communications tool. • The current cost models / budgeting approach differ from group to group.
Workstrand 4	<ul style="list-style-type: none"> • An architecture (especially an interface) will be accepted only if it is genuinely open. • An architect should be assigned through the life of the project and should have access to resources to set-up the required infrastructure, not just leave this to each individual project. • There should be a known reasonable cost of implementing standard architectural features such as back-ups, disaster recovery, EDM etc. Projects could then also be asked to deliver new tried and tested 'architectural' components for other following projects to use. • Data/Information Quality – data quality is poor from system to system.

Workstrand 5	<ul style="list-style-type: none"> • There is very little focus on delivery/deployment/implementation. • Would it not be better to start with a minimum set of reporting/project management requirements for all projects? • No savings are shown to be derived from the benefits of sharing resources and rationalizing departments. • An increase in the number and quality of project managers is needed, possibly also project co-ordinators. • Decide upon a common project methodology and ensure that all project managers, programme managers and project co-ordinators use the same approach.
Workstrand 6	<ul style="list-style-type: none"> • There isn't any mention I can see about the role of the website and documentation in support. • We should introduce common software in the next 18 months. • Absence cover needs to be specifically addressed. • If UIS is going ITIL then it would be worth talking to Universities where the central IT service has been using ITIL for more than one year. • Consider a simple survey built into ticket closure. • A single known error database / knowledge-base should be created and used by all, this could be established immediately and provide benefits. • Email & Calendaring needs significant investment – though different users require different email clients, the backend used by all should be common so that we can provide a consistent messaging approach. • Consider the use of thin clients / VDI in place of full individual desktops.
Workstrand 7	<ul style="list-style-type: none"> • There is potential for overlap/duplication and, quite possibly, conflict here with the University IT Community. • Concerns around data protection. • Central function to provide data reporting / datamarts data quality is very important. • Information found in active directory, outlook address book, lookup system is inconsistent.

Annex E: Summary of feedback from the wider University

Workstrand 1	<ul style="list-style-type: none"> • Encourage a bold approach to catalogue development. Currently some services are not enterprise level nor joined up, e.g. Hermes and Google Calendar. • Desktop strategy should include a Cambridge wide, internal, secure, mirrored, storage Cloud for Staff and Students, with snapshot retrieval if possible. In addition a secure, mirrored, storage cloud should be closely coupled to the HPCs so it can be used more robustly for science. These may or may not be the same stack. • Diary management should be capable across the whole of the university • Wireless with Eduroam should be facilitated into as many institutions/departments/buildings as possible, as cost effectively as possible. • Cambridge should consider a BYOD asset management service so lost/stolen handsets can be assassinated remotely.
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<p>Workstrand 2</p>	<ul style="list-style-type: none"> • More direct mechanisms for engagement of UIS activity with the end-users of software, both in terms of structural processes, and in terms of resources allocated. • Useful to distinguish between different classes of user needs, but not easy to engage with a "community" in the abstract. • Arms-length tools must be supplemented with more direct opportunities for end-users to influence the development of those services. The ITIL Service Management Framework might also have the unintended consequence of distancing providers from end-users, by giving a structural emphasis to reporting and statistical control rather than dialogue comparing specific needs and service features. • The intention to create a dedicated User Experience function within the UIS welcomed, but the resources allocated (1 staff member initially, rising to 3 in 5 years' time) appears to be disproportionately small • Unfortunate that no body with dedicated responsibility for end-user needs has been directly involved in the workstrand review process, meaning that there will have been no opportunity for the structural proposals to take account of a user-centred perspective. • Recommendation that the workstrand reports carried out to date should be supplemented by an additional workstrand, having sole responsibility for identifying approaches to user-centred process design with a primary focus on end-user needs. • "Career and professional development" and "Community" sections of the summary should be high on the list of priorities but do imply the need for extra staff to make these things possible. This needs to be seen a priority alongside more overtly obvious operational needs: not something we've found easy in the past. • Career development should be available all year round via online training. • Cambridge should be a stakeholder and in JANET Moonshot project so effective collaborations with scientists within and across institutions can be achieved. • UIS should have an effective outreach programme when new Departments and buildings are proposed to get the researchers online as quickly as possible.
<p>Workstrand 3</p>	<ul style="list-style-type: none"> • There was some useful discussion at the last meeting with the Schools about the way in which the Schools' IT Governance might interact with the ISC through the Schools' IT Committees. If the Schools' IT Committees are to have real influence, they need to have a clearly defined direct interaction with the ISC, probably including a mechanism in which the ISC sends them discussion papers for comment. • How does the existing Software Sales function fit into the proposed Services Catalogue framework?

Workstrand 4	<ul style="list-style-type: none"> • Workstrand 4 will be particularly critical in determining future support for innovation, however, the current draft report is not explicit in presenting the ways in which the proposed architectural approach will accommodate innovation. • Several potential threats to innovation capacity that I would have liked to see addressed in the recommendations of workstrand 4: <ul style="list-style-type: none"> ○ How will the external commercial stakeholders (contractual or 'behind the scenes') that are unavoidably involved in architectural decisions be recognised for open discussion of functional benefits versus lifetime cost trade-offs with the user communities? ○ What mechanisms will be used to track opportunity costs resulting from emerging standards and functional innovation that might not be accommodated by specific architectural decisions? How will these mechanisms engage with the user communities? ○ What process will be followed for regular rollover of architectural layers at an optimum point between early-adopter and obsolescence? How will the competing needs and preferences of different user communities (e.g. for rapid versus gradual change) be accommodated in the rollover process? ○ What mechanism will be used to monitor and anticipate the point at which each architectural technology investment becomes an organisational liability rather than an asset? How will user communities engage with the need for regular architectural change? • It's the ability of systems to exchange information which is the key point and this depends on clearly defined interfaces wherever possible using Open Standards.
Workstrand 5	<ul style="list-style-type: none"> • Project expertise which most institutions lack, e.g. Business Process Analysis and Change Management, might be made available on a consultancy and/or training basis to the University as a whole. This is to some extent implied by the recommendations but could usefully be made more explicit.
Workstrand 6	<ul style="list-style-type: none"> • It would be useful to be able to transfer tickets from institutional helpdesk systems to the proposed unified UIS system. As well as being practically useful, it would also be a concrete example of interoperating systems for Workstrand 4. • Networks should offer MPLS to leverage data centre use akin to remote hosting technologies.
Workstrand 7	<ul style="list-style-type: none"> • Proposal for collaboration between the UIS, UAS and UL on information management is very welcome, both for addressing this particular longstanding need and in identifying an area for collaboration.

Annex F: Strategic initiatives

1. *Research Services*: to examine bringing in a range of services to support those involved in research, including data capture and storage services; research data archive and search; high performance computing; collaboration support service; analytic discovery service (Hadoop); 'One click' statistical analysis and visualisation services; and long-term preservation service

2. *Educational Services*: in response to ad hoc and informal feedback from new students and those returning having had an experience from another university there are a number of areas to examine for possible improvement. These might include: continuing deployment of University Moodle VLE and CamSIS enhancements; consideration of ubiquitous student tablets for course notes, providing on screen annotation capability and storage in lifetime personal digital archive; creating a new standard for high-tech lecture theatres, with lecturer and student content 'pullable' to any physical facility, and video capture by default auto-uploaded into VLE; revisiting MooC policy in light of Harvard experience; and assessing scope for utilising social media to enable students to engage with industry/potential employers and provide mentoring support to enhance social contribution.

3. *Student Experience*: considering the end-to-end lifecycle of the student from a digital perspective and thinking about what their experience is at the University. There is an emerging aspiration that services for this group should be seamless and intuitive, and be available on any device. With a single log on, it would create a student digital asset available for life.

4. *IT support for Estates*: With the high level of investment in new buildings across the university, it is suggested that careful thought be given to the IT related experience of someone coming to one of those buildings either as a visitor, to work or study. Along with the linkages to areas that might be explored under educational services (above), consideration of such areas as room booking; energy management; security systems; WiFi standards; digital signage; applications to find your way; and exploring the possibility of linking these systems together.

5. *IT Infrastructure consolidation*: UIS currently runs a number of legacy systems, but if it were to develop a common platform this would enable financial and energy savings. It could then be further extended as a service for the rest of the University upon which research and administration systems, for example, might then be able to generate additional benefits.

6. *Common End-User Compute (aka Desktop)*: To develop a desktop service that is configurable to meet the needs of students, academics and administration staff be accessible on a wide range of different types of device, from small mobile devices through to conference room display screens. The aim would be to reduce the need for the users to reconfigure applications or screens, and for there to be inbuilt security features which provide adequate protection in a BYOD context. Applications would be positioned appropriately, by role, institution and user allow institutions (and potentially individual users), and there should be scope to add additional optional applications and services that would be hosted on centralised virtualised platforms – making them accessible in an integrated manner on devices. Additionally the aim would be to incorporate a range of other optional services, including provision of hardware (for those who do not choose BYOD), and support services leverage where appropriate the features of mobile devices, including telephony integration, location awareness, mapping etc. The capture of appropriate usage and service information would then enable management, billing and progressive improvement of the facilities offered.

7. *Enterprise systems renewal (CamSIS, CUFS, CHRIS)*: With one of these systems due to be reviewed the future delivery of these services can be considered, and the appropriate model determined prior to being locked into the current method of delivery. Options may include one or two being sourced in the same way, the appropriate use of cloud services, or internal build.

Annex G: Proposed UIS Units

1. Research and Institutional Services: Responsible for building strategic partner relationships with those institutions that are looking for federated IT services that they can use alongside their own services. These will typically be, Schools, Departments and Colleges, amongst others.

As part of this, portfolios of services would be developed for particular customer groups, and individual services would be managed to ensure that needs are met. By ensuring a cohesive operating platform for services to institutions, this function would aim to see those institutions be able to innovate faster and more creatively in order to meet their own needs.

2. Education, Administration and Student Services: Responsible for building strategic partner relationships with those institutions that are looking for end-to-end IT services. Typical examples might include the University Administrative Services (UAS) and other Non-School Institutions (NSIs).

As part of this, portfolios of services would be developed for particular customer groups, and individual services would be managed to ensure that needs are met. By ensuring a cohesive operating platform for services to institutions, this function would aim to see improved integration between systems.

3. Architecture/Design: Works with other areas to develop an IT service delivery framework and associated principles in support of the University's core objectives. In other words, the architecture defines how systems, technology and information will be utilised in the areas of research, teaching, administration, etc. and increasing the benefit for the University by enhancing integration between systems, and enabling re-use and thus reduced duplication.

4. Build/Development: Providing the Information Systems development services to the University, in a way that ensures new initiatives deliver a more consistent user experience.

5. Information Management: Providing an information management framework to help the University to both better manage its data-related risks, and extract the full benefits of the data sets it owns. It encompasses the principles, policies, and procedures required to ensure that data are accurate, available when required, and accessed, retained, and disposed of appropriately.

6. Service Operations: Providing the day-to-day delivery of UIS services to the University. We have also considered the option of dividing Service Delivery into Infrastructure and Service Delivery, drawing a distinction between the more technical side of service operations (e.g. networks) and the more customer-facing side (e.g. service desks).

7. UIS Operations: Providing the day-to-day operation of Finance, HR, Communications, and Buildings to support the UIS, as well as internal governance mechanisms. This is also where the resource to support the capability development of IT would be located.

Annex H: Financial Modelling

Assumptions are as follows:

- Attrition at 1.5%p.a. of UIS staff costs
- Change resource requirement comes to an end in 15/16
- Only 50% the cost of new roles incurred in 14/15

£k	14/15	15/16	16/17	17/18
Section Heads*4	200	400	400	400
Change resource	100	150	-	-
Pilot/Catalogue Development	100	50		
Staff Savings (1.5% pa)		166	167	169
Cum. Savings		166	333	502
Total	400	434	67	(102)

The draw down on the Transition Fund balance at end 16/17 would therefore be c.£900k, with the senior roles fully funded by savings realised in UIS from 17/18.