

UCISA Top Concerns Survey 2006/2007 - Results

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A quick overview of the Top Concerns Process

The UCISA Top Concerns Process has been established to:

- Determine issues of importance to our membership;
- Determine matters to take forward to appropriate other bodies (such as Funding Councils, JISC, key suppliers etc) on behalf of the membership of UCISA: we would expect responses from these bodies (even if they were only to politely ignore our members concern) which we would convey back to the membership;
- Guide which events UCISA (and its groups) organise;
- Provide input to programme committees for major meetings and conferences.

The benefits of the process are:

- Takes members concerns into the heart of the UCISA activities
- Possibly resolve some issues within the UCISA community and through external bodies;
- Build-up UCISA's reputation as a significant group representing the sector on ICT matters to various external bodies and agencies.

The process is fairly straight forward:

1. Members are asked by e-mail to suggest items and issues that they wish to be considered as the top ICT related concerns of our community. Members provide a brief explanation of each concern they put forward. The collection of candidate concerns is anonymised.
2. These e-mail responses are analysed and collated to produce a list of candidate Top Concerns. Each concern is given a working title and a short explanation of the issues involved will be written.
3. The UCISA Directors community cast votes to determine the priorities of the concerns using a simple web survey. We adopt a ranking system similar to that used by Educause in their *Top Issues* survey.

Once the voting has been completed, we process the data and publish the results at the Management Conference and on the UCISA web site.

This is the third UCISA Top Concerns Survey; the results from the 2003/4 and 2004/5 surveys can be found in Annex D.

The 2006/7 Survey

The candidate issues

For the 2006/7 survey we received 151 candidate items from directors to use in the Top Concerns Process. In the 151 items there were some duplicate suggestions indicating at that there were a good number of common/shared issues. We eliminated the duplicates and combined some of the issues raised to produce a total of 36 candidate issues. The list of 36 was considered by the UCISA executive and further distilled to a total of 28. The 28 issues put into the survey are listed below (and described in the annex).

Candidate Concerns 2006/7	
1	Funding and sustainable resourcing of IT
2	Governance of IT

Candidate Concerns 2006/7	
3	The impact of legislative compliance and government directives on IT policy development and IT/IS service delivery
4	The Bologna Process
5	Impact of role evaluation on IT/IS staff
6	Taking a more strategic approach to staffing IT/IS departments
7	IT Strategy and planning
8	Strategic planning and development of an architected, enterprise-wide IT infrastructure
9	Business Continuity, disaster recovery
10	Service availability and resilience
11	Professional management and delivery of IT Services, service quality assurance (with reference to ITIL and International Standards)
12	Increasing workloads to meet customer expectation
13	Managing technical complexity
14	Extended hours support, 24*7 support
15	Mobile computing / anywhere, anytime computing
16	Accessibility issues
17	Outsourcing and shared services
18	"Environmentally friendly" computing / "green issues" in computing
19	Information security / Network security
20	Identity Management
21	Transition to the UK Federation and Shibboleth
22	Information Management Strategy / Data administration
23	Business systems to support the institution
24	E-learning, Systems, pedagogy, deployment, content management, sustainability
25	Research Support: High Performance Computing, Virtual Research Environments and collaborative working
26	Web systems, services, Service Oriented Architecture
27	Enabling, the use of social network applications
28	Emerging technologies /Keeping up with new "things"

A web survey was built for us by colleagues in Computing Services at The University of Liverpool using the *SelectSurvey* system (from *Class Apps*) and the members of the UCISA-Directors email list invited to vote. The voting began on March 14 and ended on 26 March. 85 completed (and valid) survey forms were submitted from the senior management of 72 institutions. Of the respondents about 70% were directors or heads of services and the others senior managers within the services.

The results 2006/7

The results of the survey are shown below (by each of the ranking criteria)

Which of the IT/IS related concerns below are of most importance for your institution to resolve for its strategic success

Rank	Concern 2006/7 – Strategic Success
1	Resources for IT (1)
2	IT Strategy and planning (7)
3	e-learning (24)
4	Architected IT Infrastructure (8)
5	Governance (2)
6	Information Management (22)
7	Disaster Recovery (9)
8	Service availability (10)

9	Identity Management (20)
10	24 * 7 Support (14)

Which of these have the potential to become much more significant in the next twelve months?

Rank	Concern 2006/7 – More significant in next 12 months
1	Resources for IT (1)
2	IT Strategy and planning (7)
3	Green computing (18)
4	Identity Management (20)
5	Governance (2)
6	24 * 7 Support (14)
7	Mobile computing (15)
8	Increasing workloads (12)
9	Professional Delivery / ITIL (11)
10	Disaster recovery (9)

Which of these are you, as a senior IT/IS manager spending most of your time addressing?

Rank	Concern 2006/7 – Most time
1	IT Strategy and planning (7)
2	Resources for IT (1)
3	Governance (2)
4	Service availability (3)
5	Role Evaluation (5)
6	Strategic approach to staffing (6)
7	Increasing workloads (12)
8	Business systems (23)
9	Architected IT Infrastructure (8)
10	Professional Delivery / ITIL (11)

On which of these is your institution spending most resource (human and / or fiscal)?

Rank	Concern 2006/7 – Most resource
1	Business systems (23)
2	E-learning (24)
3	Service availability (10)
4	Architected IT Infrastructure (8)
5	Resources for IT (1)
6	Security (19)
7	Disaster Recovery (9)
8	Information Management (22)
9	IT Strategy and planning (7)
10	Web Systems (26)

We once again combined the voting to produce an overall list of the concerns in rank order.

Rank	Concern 2006/7 – Overall
1	Resources for IT (1)
2	IT Strategy and planning (7)
3	E-learning (24)
4	Business systems (23)
5	Service availability (10)

Rank	Concern 2006/7 – Overall
6	Architected IT Infrastructure (8)
7	Governance (2)
8	Disaster Recovery (9)
9	Information Management (22)
10	Identity Management (20)

Changes since the 2004/5 Survey

There are some changes in this year's results compared to the 2004/5 survey.

Anytime, anywhere computing fell to 15th place in the 2007 survey and Network Security to number 17. Network technologies has disappeared (not even a candidate in 2007), Enterprise Portals fell to 19th (within Web Services). User management is covered by Identity Management which is just in the top ten.

Resources for IT and IT Strategy and planning have moved up to numbers 1 and 2 in the 2007 survey. E-learning, IT Infrastructure, Systems Availability and Data (Information) Management continue to be highly ranked concerns.

The new entrants in 2007 are Governance of IT, Disaster Recovery and Business Systems.

Compared with Educause 2006 Top Issues

The top ten Educause Top Issues for 2006 are shown below.

Educause Top Issues (2006)	
1	Security and Identity Management
2	Funding of IT
3	Administrative / ERP/ Information Systems
4	Disaster Recover / Business Continuity
5	Faculty development, support and training
6	Infrastructure
7	Strategic Planning
8	Governance, organisation and leadership
9	E-Learning, distributed teaching and learning
10	Web systems and services (SOA, SOAP, WSDL, etc...)

There is strong correlation between the UCISA and Educause concerns. The relative ranking of the top issues differs. The Educause list includes Web systems and services, which came 19th out of 28 on the UCISA ranking, and Faculty development, support and training which was not on the UCSIA candidate list. Service Availability and Identity management feature in the UCISA Top Concerns but not in the Educause list; Identity Management fell from the Educause list in 2006.

Commentary

There is continued focus on finding sufficient resources for IT/IS within institutions - this concern is ranked in the top two for three of the four criteria for voting - and it is rated 5th when respondents consider where they are spending most resource. It remains a serious issue for the leaders in IT/IS departments.

The emergence of Governance as an issue this year is of interest. This has not featured in the survey before. It has, perhaps, become a concern as a consequence of wider interest in Governance within the IT

service sector and through more formal considerations of service management and security standards and codes of practice.

E-Learning continues to feature as a highly ranked matter of concern even though it has been a feature of UK higher education for many years (10-15 years). It is perhaps now a more significant part of institutional learning and teaching strategies and so continues to be a key issue of the IT/IS departments who provide the supporting infrastructure.

The systems used to support our institutions' business activities are more prominent on the radar in this survey. It is possible that our organisations are now becoming to rely on these more than in previous times and recognising that their proper operation is of critical importance.

Disaster recover has been lurking below the top part of the list for sometime. It has now become much more highly ranked - it may be this is due to a recognition that systems are of greater importance to the operation of the institutions than in previous times and it may be a reaction to events at home and abroad.

"Green Computing" is highlighted as becoming increasingly important in the next twelve months. Environmental issues are much more prominent in the UK at this time and along with much higher energy costs (and power hungry systems) this issue is clearly of growing importance.

The survey indicates that there are possibly some emerging issues resulting from the HE sector's modernisation of employment practices / role evaluation.

The importance of developing proper system architectures and architectures for our core IT infrastructures continues to be recognised as a major issue by our respondents. This along with improvements in service availability and the professional delivery of services feature high in the list of the concerns of the UCISA survey respondents.

Familiar issues such as providing support for 24*7 operations, Security of our systems, mobile computing again feature in the more highly ranked issues. Identity Management also continues to feature in the list of concerns.

Feedback on the survey process

We sought some feedback on the process in the survey. Only seven comments were received. A couple of these said that the process took too long to carry out and one said the candidate list was useful input to their institution's IT/IS strategy development. The other responses suggested new candidate concerns (for next year).

More details...

Full results will shortly be available on the UCISA web site along with the documentation collected and developed as part of the process.

Annex A: Results Summary - The UCISA Top Ten Concerns 2007 (overall)

- I. Funding and sustainable resourcing of IT**
- II. IT Strategy and planning**
- III. E-learning, Systems, pedagogy, deployment, content management, sustainability**
- IV. Business systems to support the institution**
- V. Service availability and resilience**
- VI. Strategic planning and development of an architected, enterprise-wide IT Infrastructure**
- VII. Governance of IT**
- IX. Information Management Strategy / Data administration**
- X. Identity Management**

I. Funding and sustainable resourcing of IT (#1)

Many IT/IS departments are under pressure to reduce costs year on year. Because Moore's Law still seems to apply to many (hardware) technologies we are able to do more quantitatively for equal or lower costs (declining unit costs). However, the on-going support and upgrade costs of many of the essential items of software and our staff costs are increasing. Some IT/IS departments are trying to reduce software costs by using open source solutions and recognise that this may increase support staff costs and possibly compromise the reliability and availability of services. Some institutions are making "strategic" investment in IT/IS systems but in some cases are not always providing the ongoing resources required to secure the long-term future of such investments. A number of IT/IS departments are able to obtain funding for capital developments but report that they are unable to secure sufficient staff resource to take such developments forward in an effective fashion. Lack of appropriate space for IT/IS equipment (particularly networking equipment) is cited as an issue by a number of IT/IS departments.

Within the sector, there appears to be more uncertainty and variability in the funding sources and this could have a direct effect on the funding of IT/IS within institutions. If the increasing pervasive nature of IT throughout our institutions is to continue, then this requires that the investment in IT/IS departments be increased and that resources be provided to sustain the services they provide. It is recognised by many IT/IS departments that they need to do more to demonstrate the benefits investments in IT delivery.

II. IT Strategy and planning (#7)

The IT strategy for a university needs to be aligned to the institution's strategic objectives and its plans for achieving those objectives. The planning process adopted by institutions should ensure that it enables the vision of how IT/IS might help transform an institution to be considered and, where accepted, embedded in the institution's strategic plan. IT/IS departments need to work to support their institution in the achievement of its strategic objectives by the appropriate and timely delivery of supporting technology. This will inevitably involve the prioritisation of different elements of the plan based on the priorities of the underpinning institutional plan. Where IT/IS provision is highly devolved it may be more difficult to bring together a coherent institutional IT strategy and strategic plan.

The importance of a well-articulated and practiced planning process is critical. Strategic plans need to be flexible and approved (see "Governance"); they should inform the senior decision makers in our institutions about the medium and long-term value of IT.

Planning is of central importance to the management of our IT/IS department; we will be asked to meet new institutional requirements and expectations whilst trying to reduce service costs.

Strategic planning issues include¹:

- What is the planning process?
- Will the plan be developed in-house or with the support of external consultants?
- How will the plan be used? Will it be used to make informed decision?
- How will the success of the plan be evaluated by the IT/IS department and the institution?
- How will you maintain focus on the strategic plan across the varying cultures within the institution?

III. E-learning, Systems, pedagogy, deployment, content management, sustainability (#24)

Whilst e-learning is now becoming embedded into the universities within the UK (and indeed is also becoming widely used in schools at all levels) there are a number of issues related to e-learning that perhaps need to be addressed:²

- How will the changing demographics of students affect the delivery of education? Where will e-learning fit into the institution's attempt to expand its outreach to new populations?
- Are the necessary resources being provided to sustain the institution's e-learning developments?
- How does the e-learning environment affect learning? What changes in the delivery of e-learning must be made to address science lab courses? How do we ensure that students learn what they have traditionally learned in laboratories through simulations provided through e-learning?
- How do we address different learning styles in e-learning courses? What new or different ways of learning can e-learning provide that are fundamentally unlike traditional methods? How do institutions ensure that online courses integrate accessible technology into their designs?
- How can e-learning be used to improve the quality of student learning, and how do we measure the effectiveness of e-learning? How do we build an assessment model for a variety of e-learning experiences, including on- and off-campus, fully online, and blended courses? How do we ensure that students remain engaged in an e-learning environment?
- What is the impact on attendance in hybrid courses as a result of faculty making course materials downloadable from the Internet?

IV. Business systems to support the institution (#23)

Whether an HEI is using an ERP system or an integrated set of applications from potentially different manufacturers, projects related to these business support systems demand large and sustainable investment and commitment by institutional and IT/IS leadership, both throughout and after implementation. Some of the questions that need to be addressed when considering or implementing the core systems include the following:³

- What are the mission-critical factors driving your institution's position on business support systems? What service and process improvements are expected for successful implementation? Are there viable alternatives, such as enhancing existing systems?
- If a decision has been made to implement a new system, could you develop one in-house, or should you buy off the shelf? Given the complexity and maintenance challenges of integrated administrative systems, does building in-house remain a viable option, even for large IT/IS departments? If you are purchasing a commercial product, would you customize? If you are considering a software package of integrated systems, will the functionality of the package expand to accommodate integration of course management systems, portals, smart cards, and so forth?
- Is your institutional leadership committed to the decision and implementation? Will the decision survive changes in leadership and management? Will the implementation team

¹ Based on Educause Current IT Issues Survey Report 2006.[Educause Quarterly Number 2, 2006]

² Based on Educause Current IT Issues Survey Report 2006.[Educause Quarterly Number 2, 2006]

³ Based on Educause Current IT Issues Survey Report 2006.[Educause Quarterly Number 2, 2006]

include participation by stakeholders from both technical and functional areas? How will their expectations be managed? Do you have a solid implementation plan? Does it include a communication plan to keep all constituencies informed and committed?

- Have you resolved data-ownership issues? Have you considered converting and/or archiving years of legacy data? Will you need a data warehousing system too?
- Does the new system fit your institution's technical strategy at the back-end and network levels? Does the system align with preferred data-handling strategies, such as authentication, security, and privacy?
- Will your institution adapt its business processes to the best or effective practices configured in the solution you implement to minimize or avoid customization? Are the new functional and system requirements realistic? Will your institutional leadership support needed business process changes?
- Is your institution ready for the upgrades and changes that have happened during your implementation? Do you have sustainable resources to improve the system and keep up the users' productivity in the new environment?

As institutions of higher education increase their focus on systematic approaches to excellence in performance, effective deployment of core business support systems will continue to be a strategic priority.

V. Service availability and resilience (#10)

IT systems have now become so critical to the running of the university that service availability is of paramount importance. Downtime equates to loss of income, staff and students twiddling their thumbs. Achieving robust, reliable and resilient applications and IT infrastructure is of crucial importance. Modern systems can incorporate many high availability features such as redundant hardware components, clustering etc and basic machine availability is now very high. However, the relatively recent emergence of regular "critical patch sets" can compromise the gains in up-time of such systems, particularly as applying the patches often require systems to be removed from service. IT/IS departments need to design and configure their systems so that "patching time" does not become a significant case of service unavailability.

IT/IS departments should consider adopting appropriate architectures for their applications, IT infrastructure and operating processes to ensure that system availability meets their institution's availability requirements. System resilience and availability should be considered at the outset of IT projects and project budgets should include the funding necessary to provide this.

VI. Strategic planning and development of an architected, enterprise-wide IT Infrastructure (#8)

Most institutions have a core infrastructure that extends across the institutional enterprise. Managing the infrastructure needs a careful balance of cost, manageability, flexibility, scalability, security and performance. The IT infrastructure should be architected (designed) to be fit for purpose and to be robust, reliable and resilient. It must adequately support the present needs of the institution and be capable of development to support likely future institutional requirements. Resources must be provided to sustain the infrastructure and enable it to be developed when necessary.

It is increasingly difficult to explain the technicalities behind infrastructure upgrades due to the complexities and nature of technology. However it is also difficult to gain confidence in what is seen from those outside our IT/IS departments as a constant stream of expense with little visible gain. High maintenance costs and license renewal fees are problems we face as are 3 and 4 year lifecycle replacement requirements for core infrastructure platforms.

Our IT infrastructures need to be planned and architected to enable the institution to take full advantage of the opportunities to deploy IT/IS based systems and services to support and enhance all we do. It must be recognised as a strategic institutional resource. Attention should be given to:

- Taking an institutional view of the IT infrastructure (perhaps related to Governance)
- Having replacement plans for servers, network components, cables, air conditioning, uninterruptible power suppliers, physical security etc. which form the IT Infrastructure

- Designing the infrastructure to include redundancy so as to enable a disaster recovery strategy
- Monitoring the performance of the infrastructure

VII. Governance of IT (#2)

"A characteristic theme of IT governance discussions is that the IT capability can no longer be a black box. The traditional handling of IT management by board-level executives is that, due to limited technical experience and IT complexity, key decisions are deferred to IT professionals. IT governance implies a system in which all stakeholders, including the board, internal customers and related areas such as finance, have the necessary input into the decision making process. This prevents a single stakeholder, typically IT, being blamed for poor decisions." – Wikipedia

How should universities achieve a workable decision-making structure around investment in developing enterprise-wide IT systems? Should IT/IS departments be providing leadership, and if so, what options for structures for IT governance can we agree with our colleagues for this purpose? How are policy-decisions about IT made within the institution and under what authority are such policies enforced?

VIII. Business Continuity, disaster recovery (#9)

Is our business continuity planning keeping pace with the growth in IT/IS services that are becoming embedded into, and a critical part of our institutional business and academic processes? IT/IS management need to work with colleagues so that the institution is clear about their requirements of a business continuity plan which IT/IS can support.

Traditionally we have not provided the level of resilience that has become the standard in industry, leading to an increased risk of outages to applications, services and to our IT infrastructure. More focus is need to establish effective business continuity / disaster recovery facilities such that we can continue to deliver services in an acceptable fashion in the event of a major failure / incident, even in the event of the loss or failure of our main data centre.

We should consider designing our systems and infrastructure so that high availability / disaster recovery capabilities are built-in; we should also consider retrospectively building a high availability / disaster recovery capability. This may involve providing some additional capacity on-site or developing a strategy which makes appropriate use of external services.

The disaster recovery capabilities (and plan) should be properly and regularly tested, in particular these plans need to be tested whenever significant changes are made to the production environments. Some institutions report that their senior executives are not supportive of the proper "live" testing of disaster recovery capabilities. Senior IT/IS managers need to demonstrate the value of such testing even when it poses some risk to the continuity of production services. IT/IS departments need to ensure testing does take place to verify the disaster recovery capability does indeed work, but need to find appropriate ways which minimise the inconvenience to the day-to-day operation of their institution.

The cost of providing disaster recovery capabilities, which supports the level of recovery agreed with the institution, is likely to be a significant issue and included in the fiscal planning for IT/IS.

IX. Information Management Strategy / Data administration (#22)

Information management (Data Administration) is becoming a more strategic issue within institutions. There are a number of aspects to this topic including:

- Information classification
- Retention and archiving
- Management of redundant formats
- FoI/DPA compliance
- Email archiving
- Scientific data repositories, data mining and informatics

- Records and document management
- Electronic Lab Notebooks
- Enterprise Content Management solution to manage it all!
- Data curation
- Security considerations

There are some particular issues related the curation of large sets of data generated by research projects. The Information management policies need to address how this data is to be stored and managed over a long period of time.

The development of an Information Management Strategy is of considerable importance to some institutions.

X. Identity Management (#20)

Identity and access management concerns the processing and managing of information about people - who they are, how they are authenticated and what resources they can use. In many HEIs, the lack of formal policies, multiple diverse distributed identity repositories, and reliance on legacy systems for automated account provision and managing people directories is causing issues and increasing risks to the institution. We also need to address the wider area of authentication and access to external systems and services including via the UK Access Management Federation. It is then critical to ensure that the institution has the right infrastructure in place to assure itself, and others it works with in the UK Federation, that it knows who its members are and what their entitlements might be.

Annex B: Full Results from the 2007 Survey

Which of the IT/IS related concerns below are of most importance for your institution to resolve for its strategic success

Rank	Concern
1	1. Resources for IT
2	7. IT Strategy and planning
3	24. E-learning
4	8. Architected IT Infrastructure
5	2. Governance
6	22. Information Management
7	9. Disaster Recovery
8	10. Service availability
9	20. Identity Management
10	14. 24 * 7 Support
11	23. Business systems
12	12. Increasing workloads
13	11. Professional Delivery / ITIL
14	6. Strategic approach to staffing
15	15. Mobile computing
16	19. Security
17	5. Role Evaluation
18	25. Research support
19	13. Technical Complexity
20	28. Emerging technologies
21	26. Web Systems
22	27. Social networking
23	18. Green computing
24	17. Shared services
25	3. Compliance and government
26	21. UK Federation
27	16. Accessibility
28	4. Bologna

Which of these have the potential to become much more significant in the next twelve months?

Rank	Concern
1	1. Resources for IT
2	7. IT Strategy and planning
3	18. Green computing
4	20. Identity Management
5	2. Governance
6	14. 24 * 7 Support
7	15. Mobile computing
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9	11. Professional Delivery / ITIL
10	9. Disaster Recovery
11	22. Information Management
12	5. Role Evaluation
13	24. E-learning
14	6. Strategic approach to staffing
15	10. Service availability

Rank	Concern
16	8. Architected IT Infrastructure
17	27. Social networking
18	21. UK Federation
19	26. Web Systems
20	17. Shared services
21	3. Compliance and government
22	23. Business systems
23	28. Emerging technologies
24	25. Research support
25	13. Technical Complexity
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28	4. Bologna

Which of these are you, as a senior IT/IS manager spending most of your time addressing?

Rank	Concern
1	7. IT Strategy and planning
2	1. Resources for IT
3	2. Governance
4	10. Service availability
5	5. Role Evaluation
6	6. Strategic approach to staffing
7	12. Increasing workloads
8	23. Business systems
9	8. Architected IT Infrastructure
10	11. Professional Delivery / ITIL
11	9. Disaster Recovery
12	20. Identity Management
13	24. E-learning
14	22. Information Management
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17	3. Compliance and government
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20	28. Emerging technologies
21	17. Shared services
22	26. Web Systems
23	25. Research support
24	18. Green computing
25	21. UK Federation
26	27. Social networking
27	16. Accessibility
28	4. Bologna

On which of these is your institution spending most resource (human and / or fiscal)?

Rank	Concern
1	23. Business systems
2	24. E-learning

Rank	Concern
3	10. Service availability
4	8. Architected IT Infrastructure
5	1. Resources for IT
6	19. Security
7	9. Disaster Recovery
8	22. Information Management
9	7. IT Strategy and planning
10	26. Web Systems
11	13. Technical Complexity
12	5. Role Evaluation
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Rank	Concern
23	28. Emerging technologies
24	27. Social networking
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26	21. UK Federation
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28	4. Bologna

Number of responses = 85

Number of different institutions = 72

Annex C: UCISA Top Concerns 2006/7 Details of the Candidate Top Concerns

Resources

1. Funding and sustainable resourcing of IT

Many IT/IS departments are under pressure to reduce costs year on year. Because Moore's Law still seems to apply to many (hardware) technologies we are able to do more quantitatively for equal or lower costs (declining unit costs). However, the on-going support and upgrade costs of many of the essential items of software and our staff costs are increasing. Some IT/IS departments are trying to reduce software costs by using open source solutions and recognise that this may increase support staff costs and possibly compromise the reliability and availability of services. Some institutions are making "strategic" investment in IT/IS systems but in some cases are not always providing the ongoing resources required to secure the long-term future of such investments. A number of IT/IS departments are able to obtain funding for capital developments but report that they are unable to secure sufficient staff resource to take such developments forward in an effective fashion. Lack of appropriate space for IT/IS equipment (particularly networking equipment) is cited as an issue by a number of IT/IS departments. Within the sector, there appears to be more uncertainty and variability in the funding sources and this could have a direct effect on the funding of IT/IS within institutions. If the increasing pervasive nature of IT throughout our institutions is to continue, then this requires that the investment in IT/IS departments be increased and that resources be provided to sustain the services they provide. It is recognised by many IT/IS departments that they need to do more to demonstrate the benefits investments in IT delivery.

Governance and regulation

2. Governance of IT

"A characteristic theme of IT governance discussions is that the IT capability can no longer be a black box. The traditional handling of IT management by board-level executives is that, due to limited technical experience and IT complexity, key decisions are deferred to IT professionals. IT governance implies a system in which all stakeholders, including the board, internal customers and related areas such as finance, have the necessary input into the decision making process. This prevents a single stakeholder, typically IT, being blamed for poor decisions." – Wikipedia

How should universities achieve a workable decision-making structure around investment in developing enterprise-wide IT systems? Should IT/IS departments be providing leadership, and if so, what options for structures for IT governance can we agree with our colleagues for this purpose? How are policy-decisions about IT made within the institution and under what authority are such policies enforced?

3. The impact of legislative compliance and government directives on IT policy development and IT/IS service delivery

Our institutions are being asked to consider compliance with government guidelines and published codes of good practice. The list includes

- BSI 7799
- BSI PD0000810 & 50
- The Data Protection Act
- Regulation of Investigatory Powers Act 2000
- Employment Law
- SEC17a
- The Freedom of Information Act
- The Terrorism Act
- WEEE legislation
- DDA/SENDA (disabilities)

and so on. We face a growing number of audits (both internal and external). The rate of new legislation has increased in recent years. New legislation impacts widely on the sector but there is rarely any

provision for resources for institutions to meet the requirements of new legislation. Is the burden of new legislation preventing service departments from developing their services, as resources are diverted to meet the new legal requirements? How does the growing body of good practice and legislation affect the development of our policies?

Although the levels of central funding have fallen in recent years, there is still considerable scope for Government influence (whether UK, Scottish or Welsh) to have an impact on IT/IS service departments. This can range from shared services, where the UK Government belief is that the traditional shared services model can be applied to all public services, through to procurement, where Welsh and Scottish institutions are being pressurised to sign up to local cross-sector purchasing consortia rather than call off existing national deals. Does Government involvement put the effective running of service departments at risk?

4. The Bologna Process

The Bologna Declaration was signed in 1999 by the UK Government and 28 other nations. The aim of the 'Bologna Process' is to work towards developing a European HE Arena to foster employability and mobility within Europe, and to improve the competitiveness of European HE in the world. The Process includes a number of actions to be implemented in a range of policy areas, including quality assurance, credit transfer and accumulation, life-long learning, doctoral level qualifications and joint degrees. What will the impact be on IT/IS service departments? Is the concern that there will be a great deal of change or that we don't know what the changes will be?

Staffing

5. Impact of role evaluation on IT/IS staff

Some IS/IT departments have encountered serious difficulties with the role evaluation of their staff members. In some cases IT/IS roles have been assigned to inappropriate levels because the assessors have a low appreciation for the technical skills required to perform the IT/IS role and IT/IS managers have not been sufficiently involved in the process. There are concerns within the sector that this process is having an unsettling effect on staff, lowering staff morale and may lead to staff leaving the sector, so putting IT service provision at risk. This is particularly unhelpful when IT/IS departments are finding it difficult to recruit adequately skilled staff.

6. Taking a more strategic approach to staffing IT/IS departments

Within the IT/IS area in the HE sector, there is a need to build a credible level of professionalism, with recognised qualifications and career pathways, and consistent service levels for all IT/IS-related staff within an organisation. A more strategic approach is required to the staffing in IT/IS departments which should address appropriate staff development, performance management, retention, motivation, remuneration, and succession planning.

Strategy and planning

7. IT Strategy and planning

The IT strategy for a university needs to be aligned to the institution's strategic objectives and its plans for achieving those objectives. The planning process adopted by institutions should ensure that it enables the vision of how IT/IS might help transform an institution to be considered and, where accepted, embedded in the institution's strategic plan. IT/IS departments need to work to support their institution in the achievement of its strategic objectives by the appropriate and timely delivery of supporting technology. This will inevitably involve the prioritisation of different elements of the plan based on the priorities of the underpinning institutional plan. Where IT/IS provision is highly devolved it may be more difficult to bring together a coherent institutional IT strategy and strategic plan.

The importance of a well-articulated and practiced planning process is critical. Strategic plans need to be flexible and approved (see "Governance"); they should inform the senior decision makers in our institutions about the medium and long-term value of IT.

Planning is of central importance to the management of our IT/IS department; we will be asked to meet new institutional requirements and expectations whilst trying to reduce service costs. Strategic planning issues include⁴:

- What is the planning process?
- Will the plan be developed in-house or with the support of external consultants?
- How will the plan be used? Will it be used to make informed decision?
- How will the success of the plan be evaluated by the IT/IS department and the institution?
- How will you maintain focus on the strategic plan across the varying cultures within the institution?

8. Strategic planning and development of an architected, enterprise-wide IT Infrastructure

Most institutions have a core infrastructure that extends across the institutional enterprise. Managing the infrastructure needs a careful balance of cost, manageability, flexibility, scalability, security and performance. The IT infrastructure should be architected (designed) to be fit for purpose and to be robust, reliable and resilient. It must adequately support the present needs of the institution and be capable of development to support likely future institutional requirements. Resources must be provided to sustain the infrastructure and enable it to be developed when necessary.

It is increasingly difficult to explain the technicalities behind infrastructure upgrades due to the complexities and nature of technology. However it is also difficult to gain confidence in what is seen from those outside our IT/IS departments as a constant stream of expense with little visible gain. High maintenance costs and license renewal fees are problems we face as are 3 and 4 year lifecycle replacement requirements for core infrastructure platforms.

Our IT infrastructures need to be planned and architected to enable the institution to take full advantage of the opportunities to deploy IT/IS based systems and services to support and enhance all we do. It must be recognised as a strategic institutional resource. Attention should be given to:

- Taking an institutional view of the IT infrastructure (perhaps related to Governance)
- Having replacement plans for servers, network components, cables, air conditioning, uninterruptible power suppliers, physical security etc. which form the IT Infrastructure
- Designing the infrastructure to include redundancy so as to enable a disaster recovery strategy
- Monitoring the performance of the infrastructure

Managing Service delivery

9. Business Continuity, disaster recovery

Is our business continuity planning keeping pace with the growth in IT/IS services that are becoming embedded into, and a critical part of our institutional business and academic processes? IT/IS management need to work with colleagues so that the institution is clear about their requirements of a business continuity plan which IT/IS can support.

Traditionally we have not provided the level of resilience that has become the standard in industry, leading to an increased risk of outages to applications, services and to our IT infrastructure. More focus is need to establish effective business continuity / disaster recovery facilities such that we can continue to deliver services in an acceptable fashion in the event of a major failure / incident, even in the event of the loss or failure of our main data centre.

We should consider designing our systems and infrastructure so that high availability / disaster recovery capabilities are built-in; we should also consider retrospectively building a high availability / disaster recovery capability. This may involve providing some additional capacity on-site or developing a strategy which makes appropriate use of external services.

The disaster recovery capabilities (and plan) should be properly and regularly tested, in particular these plans need to be tested whenever significant changes are made to the production environments. Some

⁴ Based on Educause Current IT Issues Survey Report 2006.[Educause Quarterly Number 2, 2006]

institutions report that their senior executives are not supportive of the proper “live” testing of disaster recovery capabilities. Senior IT/IS managers need to demonstrate the value of such testing even when it poses some risk to the continuity of production services. IT/IS departments need to ensure testing does take place to verify the disaster recovery capability does indeed work, but need to find appropriate ways which minimise the inconvenience to the day-to-day operation of their institution.

The cost of providing disaster recovery capabilities, which supports the level of recovery agreed with the institution, is likely to be a significant issue and included in the fiscal planning for IT/IS.

10. Service availability and resilience

IT systems have now become so critical to the running of the university that service availability is of paramount importance. Downtime equates to loss of income, staff and students twiddling their thumbs. Achieving robust, reliable and resilient applications and IT infrastructure is of crucial importance. Modern systems can incorporate many high availability features such as redundant hardware components, clustering etc and basic machine availability is now very high. However, the relatively recent emergence of regular "critical patch sets" can compromise the gains in up-time of such systems, particularly as applying the patches often require systems to be removed from service. IT/IS departments need to design and configure their systems so that "patching time" does not become a significant case of service unavailability.

IT/IS departments should consider adopting appropriate architectures for their applications, IT infrastructure and operating processes to ensure that system availability meets their institution's availability requirements. System resilience and availability should be considered at the outset of IT projects and project budgets should include the funding necessary to provide this.

11. Professional management and delivery of IT Services, service quality assurance (with reference to ITIL and International Standards)

Many of the leading IT service providers base their service delivery on the Information Technology Infrastructure Library (ITIL) and achieving certification for the corresponding international and national standards (such as ISO 20000). ITIL and ISO 20000 provide a professional framework for the delivery of IT services and are increasingly being used as vehicles to improve service delivery to the high standards expected. IT/IS departments within the HE sector need to consider how to develop their delivery services within the ITIL framework. There is a need to build a credible level of professionalism, with recognised qualifications and career pathways, and consistent service levels for all IT/IS-related staff within the organisation. Developing staff and services to achieve these standards presents a substantial challenge: it takes time and effort to bring about such changes, in some cases, the existing "culture" may be unsupportive.

12. Increasing workloads to meet customer expectation

Some IT/IS departments within the sector are facing a significant increase in the volume of work they are being expected to undertake without any commensurate increase in staff numbers. The adoption of a more standard approach to service delivery, increased use of automation tools, adoption of service definitions etc. can improve the efficiency of IT/IS departments. However, in many IT/IS organisations, even after making efficiency gains in service delivery, there is still insufficient staff effort to undertake new projects and develop new and existing services to keep up with the growing expectation of the user community.

13. Managing technical complexity

Many IT/IS service departments are delivering services using a large number of server systems and supporting a very high number of end-user systems. The issue around technical complexity is not really about the number of such systems (where a system is the operating system, processor resilience arrangements, storage resilience arrangements, database systems, processor hardware etc.) but about the number of different types (variation) of such systems and how they interact together. IT/IS departments need to put in place institutional standards and processes to effectively manage the increasing complexity of systems.

14. Extended hours support, 24*7 support

IT systems within HEIs are critical to the operation of the business. With the increase in distance learning, extension of the working day (often to accommodate students studying part-time or to make better use of premises) the IT systems need to be available outside normal working hours and users' need and expect support to be available outside 09:00-17:00. How can we provide support to ensure that the systems are available to the users and can we provide the users with "helpdesk" services beyond the normal working hours (09:00-17:00 M-F say)? What is the business model for providing such support - can we afford to do it; can we afford not to do it? Can we build systems which incorporate redundant components and automated fail-over to address some of these issues? It has been observed that providing and remunerating staff to provide support is the hardest part of this issue.

15. Mobile computing / anytime, anywhere computing

As we look towards extending the reach of our IT service into the external workplace (Research) and the home (General study, research, overseas, work/life balance) we need to think of new ways in which to support our staff and students who are not on our campuses, nor even on our continent. Amongst these issues are:

- The use of non-standard equipment – possibly the user's own equipment.
- The diversity of equipment being used (Smart Phones, PDAs).
- The location of this equipment (the workplace and the home).
- Service delivery issues with out-of-hours support and time zone differences.
- Security of information and compliance with access policies.
- Access to University licensed software and resources.

With campus redevelopment, Green Travel Plan, etc portable (laptop) devices may become the normal equipment used by our staff. The challenges of home working and teleworking need to be addressed (including Health and Safety matters).

We need to develop policies to manage anytime, anywhere computing which address these issues. Institutions need to consider their policies for home workers too.

16. Accessibility issues

The 2005 amendment to the Disability Discrimination Act is designed to ensure that public bodies take a proactive approach to promoting disability equality, including more favourable treatment of disabled people where it ensures equity of outcome. As a result all public bodies should have assessed the impact of any policies and practices, which are either major in terms of the institution's core function, or major in terms of their likely effect on some groups of disabled people. The shift in emphasis from reactive to proactive consideration of disability issues has a number of impacts on IT/IS services. With the use of ICT now pervasive, covering teaching, learning, administration and research, IT/IS services must consider how disabled staff, students and visitors can have better physical and virtual access to a huge range of information systems and services – e.g. physical access to computing labs, usage of assistive technology for study and work, accessible web based materials including teaching and learning materials on VLEs, exam results, on-line surveys on staff or student information servers etc.

There are resource implications in meeting the requirements of the amended act. Issues that may need to be considered by the IT/IS Services include:

- The physical layout and design of new computing facilities need to consider the needs of disabled people
- It may be necessary to enhance systems so that they work with screen readers
- How can better accessibility of web based content be ensured?
- How can record systems be used to enhance communication of the individual needs of disabled students whilst respecting confidentiality?
- Can information systems and technology be applied to improve on the examinations process?
- How can the needs of disabled people attending training courses be catered for?
- How can institutions ensure that suppliers demonstrate awareness of disability legislation and standards when procuring systems?

- How should disabled staff and students be involved in an advisory capacity when developing or implementing new systems and applications?

17. Outsourcing and shared services

IT/IS service departments are under pressure to deliver a wide range of services that are available 24 hours a day, 7 days a week. In some institutions there is insufficient resource available to maintain such a level of service to a high professional standard. Consequently there is pressure to look at alternative methods of service provision. A number of different alternative ways of providing services can be found in the community. Some institutions are using *external managed services* (where an aspect of a service is provided by an external company) for spam filtering for example; some institutions have *outsourced* some service(s) (where the whole of a service is delivered by an external agency) for example student e-mail provision, business administrative systems etc. There are also many examples of *shared services* (where aspects of a service are provided by a consortium of different institutions with or without a non-HE organisation) for example providing regional networking.

How effective are these external services? Can external providers offer better services than in-house provision can provide (e.g. G-Mail offers 2GB mail boxes for all users)? What are the challenges in managing the provision of significant parts of your service by an external service provider? Are there strategic benefits from using external service providers?

The UK and national governments are presently very enthusiastic to encourage the sector to make use of external service providers, through what they term a “shared services model” (but which appears to have an out-of-sector partner leading) in a belief that this will provide better value for money. Is this a threat to or an opportunity for IT/IS departments in the HE sector?

18. “Environmentally friendly” computing / “green issues” in computing

How can our IT/IS department provide “*environmentally friendly*” computing platforms? How can we help reduce power consumption given that many staff and students have a laptop, each member of staff may have a couple of personal systems and maybe a printer, plus a plethora of charging devices? What should we do about the servers and systems that are running consuming power when they are not doing any useful work (i.e. they are idle)? Could we replace total room cooling with more focused cooling systems? Can we introduce new technologies which reduce consumption (of toner and ink for example) whilst not compromising the quality of the services being provided? Do our purchasing contracts incorporate appropriate requirements to limit the amount of packaging provided with equipment and to ensure its reuse? How are we addressing our obligations under the Waste Electrical and Electronic Equipment (WEEE) directive?

We need to consider taking action to reduce the consumption of power by our IT/IS systems for both fiscal and environmental reasons. We need to take on-board directives about energy consumption, sustainability and disposal of equipment. We need to formulate policies to demonstrate reductions in cost of energy. Many systems now incorporate appropriate technologies to reduce energy but policies need to be put in place to ensure widespread adoption. We need to consider exploring other ways in which IT/IS can improve the energy profile for our institutions. How will any additional costs of “going green” going to be met by our institutions?

Security

19. Information security / Network security

Institutions face a tenuous balance between the need to expand information access and the requirements to protect information assets from unauthorized and inappropriate use. Increased use of electronic information at higher education institutions has resulted in an expanding number of accounts, passwords, and other mechanisms to permit and limit access to these resources. Managing access to this expanding set of resources has itself created overhead and increases the likelihood that access to some of these resources may not be appropriate. At the same time, institutions are witnessing expanding and ever more sophisticated methods of attack to gain access to such information, there is an ever growing risk of unauthorised access. In response to these demands, institutions must establish and maintain

comprehensive security policies and procedures and enforce these with technologies that support the efficient authentication, authorization, and auditing of information access.⁵

Identity management

20. Identity Management

Identity and access management concerns the processing and managing of information about people - who they are, how they are authenticated and what resources they can use. In many HEIs, the lack of formal policies, multiple diverse distributed identity repositories, and reliance on legacy systems for automated account provision and managing people directories is causing issues and increasing risks to the institution. We also need to address the wider area of authentication and access to external systems and services including via the UK Access Management Federation. It is then critical to ensure that the institution has the right infrastructure in place to assure itself, and others it works with in the UK Federation, that it knows who its members are and what their entitlements might be.

21. Transition to the UK Federation and Shibboleth

The present mechanisms used to manage access to externally provided services for UK HEIs (such as electronic resources) is migrating from the Athens system to a federated access management system (The UK Federation) in which the Shibboleth system is used to mediate access. The transition to this federated access control model requires that HEIs provides a Shibboleth facility within their IT/IS service infrastructure that is linked to their Identity Management system. [Arrangements can be made by HEIs to continue to use the Athens system and an Athens to Shibboleth gateway (subject to payment of a charge).] Some HEIs have expressed concerns about moving to the new federated access infrastructure.

Information Management

22. Information Management Strategy / Data administration

Information management (Data Administration) is becoming a more strategic issue within institutions.

There are a number of aspects to this topic including:

- Information classification
- Retention and archiving
- Management of redundant formats
- FoI/DPA compliance
- Email archiving
- Scientific data repositories, data mining and informatics
- Records and document management
- Electronic Lab Notebooks
- Enterprise Content Management solution to manage it all!
- Data curation
- Security considerations

There are some particular issues related the curation of large sets of data generated by research projects. The Information management policies need to address how this data is to be stored and managed over a long period of time.

The development of an Information Management Strategy is of considerable importance to some institutions.

Business Systems

23. Business systems to support the institution

Whether an HEI is using an ERP system or an integrated set of applications from potentially different manufacturers, projects related to these business support systems demand large and sustainable investment and commitment by institutional and IT/IS leadership, both throughout and after

⁵ Based on Educause Current IT Issues Survey Report 2006.[Educause Quarterly Number 2, 2006]

implementation. Some of the questions that need to be addressed when considering or implementing the core systems include the following:⁶

- What are the mission-critical factors driving your institution's position on business support systems? What service and process improvements are expected for successful implementation? Are there viable alternatives, such as enhancing existing systems?
- If a decision has been made to implement a new system, could you develop one in-house, or should you buy off the shelf? Given the complexity and maintenance challenges of integrated administrative systems, does building in-house remain a viable option, even for large IT/IS departments? If you are purchasing a commercial product, would you customize? If you are considering a software package of integrated systems, will the functionality of the package expand to accommodate integration of course management systems, portals, smart cards, and so forth?
- Is your institutional leadership committed to the decision and implementation? Will the decision survive changes in leadership and management? Will the implementation team include participation by stakeholders from both technical and functional areas? How will their expectations be managed? Do you have a solid implementation plan? Does it include a communication plan to keep all constituencies informed and committed?
- Have you resolved data-ownership issues? Have you considered converting and/or archiving years of legacy data? Will you need a data warehousing system too?
- Does the new system fit your institution's technical strategy at the back-end and network levels? Does the system align with preferred data-handling strategies, such as authentication, security, and privacy?
- Will your institution adapt its business processes to the best or effective practices configured in the solution you implement to minimize or avoid customization? Are the new functional and system requirements realistic? Will your institutional leadership support needed business process changes?
- Is your institution ready for the upgrades and changes that have happened during your implementation? Do you have sustainable resources to improve the system and keep up the users' productivity in the new environment?

As institutions of higher education increase their focus on systematic approaches to excellence in performance, effective deployment of core business support systems will continue to be a strategic priority.

E-learning

24. E-learning, Systems, pedagogy, deployment, content management, sustainability

Whilst e-learning is now becoming embedded into the universities within the UK (and indeed is also becoming widely used in schools at all levels) there are a number of issues related to e-learning that perhaps need to be addressed:⁷

- How will the changing demographics of students affect the delivery of education? Where will e-learning fit into the institution's attempt to expand its outreach to new populations?
- Are the necessary resources being provided to sustain the institution's e-learning developments?
- How does the e-learning environment affect learning? What changes in the delivery of e-learning must be made to address science lab courses? How do we ensure that students learn what they have traditionally learned in laboratories through simulations provided through e-learning?
- How do we address different learning styles in e-learning courses? What new or different ways of learning can e-learning provide that are fundamentally unlike traditional methods? How do institutions ensure that online courses integrate accessible technology into their designs?
- How can e-learning be used to improve the quality of student learning, and how do we measure the effectiveness of e-learning? How do we build an assessment model for a variety of e-learning experiences, including on- and off-campus, fully online, and blended courses? How do we ensure that students remain engaged in an e-learning environment?

⁶ Based on Educause Current IT Issues Survey Report 2006.[Educause Quarterly Number 2, 2006]

⁷ Based on Educause Current IT Issues Survey Report 2006.[Educause Quarterly Number 2, 2006]

- What is the impact on attendance in hybrid courses as a result of faculty making course materials downloadable from the Internet?
- What support services are needed to assist academic staff in identifying or developing high-quality materials for an e-learning environment? How do we prepare academic staff in determining when and how to integrate new technologies into the learning experience?
- How might we use newer delivery methods such as podcasts and wikis to provide information to faculty that has historically been delivered in more traditional ways?
- How do we identify the academic programs that will likely gain advantage by particular new technologies?
- What impact does e-learning have on the cost of education to both the institution and the individual, and how can institutions leverage e-learning to reduce the rising cost of education in spite of the rising cost of technology? How does the institution promote and coordinate e-learning environments?

As new technology offerings are released and as student expectations increase along with them, it will undoubtedly remain a strategic challenge for our IT/IS departments to make these technologies available, usable, and scalable at our institutions.

Research Support

25. Research Support: High Performance Computing, Virtual Research Environments and collaborative working

IT/IS departments need to develop a strategy to support IT based tools to enhance the effectiveness of researchers and to encourage the adoption of these tools within the research communities. Such tools might include high performance computing systems, grid computing, real-time and asynchronous collaboration facilities, integrated video conferencing facilities, groupware tools (such as shared application execution and virtual whiteboard tools, shared data repositories etc). The tools need to promote and enable secure working in virtual communities which are not limited by institutional boundaries. Many of these tools exist within the research communities, IT/IS departments need to work with leading users of these facilities to make them more robust and accessible to all those who would find them beneficial. It is likely that many of the elements needed to support research will also enable other groups of staff and students to cooperate and collaborate more effectively.

Web systems

26. Web systems, services, Service Oriented Architecture

Web services is a software system designed to support interoperable machine-to-machine interaction over a network. Web services are a specific type of service oriented architecture (SOA), employing one or more of the standards-based technologies—SOAP (Simple Object Access Protocol), WSDL (Web Services Description Language), or UDDI (Universal Description Discovery and Integration). Web services represent second-generation use of the Web, automatically linking applications to applications.⁸

- Where can we best employ web services
- What is the cost of not adopting / implementing ?
- Where can we find good staff development opportunities?

Support for new ways of working

27. Enabling, the use of social network applications

What should IT/IS departments do to accommodating the "net generation" and beyond in the delivery of our services so that they are of use and relevance to them? What is the future of the services provided today by IT/IS departments and what services will they be required to provide to support "digital natives"? Is to not get in their way (with our firewalls etc.) the best we can do or can we do more? Are we reaching a point of discontinuity in the ethical and social behaviour of the generations which has been enabled by or resulted from the development of information and communications technologies? Should we employ "digital natives" to understand what (if any) our role is in the future?

⁸ Based on Educause Current IT Issues Survey Report 2006.[Educause Quarterly Number 2, 2006]

28. Emerging technologies /Keeping up with new “things”

Technology continues to change and develop at a rapid pace. How do we keep up with this change, identify opportunities for utilising new technology in innovative ways to support key business objectives? What information resources should we be subscribing to (Gartner or similar) to ‘short-cut’ the discovery process, and cut out the ‘non-starters’. How can we harness the power of our customer base (students and staff) to identify new opportunities?

How much time should we be spending with our senior colleagues to espouse the benefits of new technology, and persuade them to invest? How do we balance the need to keep delivering on core work, with spending time considering, sometimes fruitless, emerging technologies and methodologies?

Annex D: Previous Top Concerns Surveys

2003/4

The first UCISA Top Concerns survey was carried out in 2003/4. At that time members were invited to rank the issues based on importance to their institutions and on their importance to UCISA. A combined rank of “overall importance” was computed too. The Top Concerns in 2003/4 are shown below.

Rank	Concern 2003/4
1	Data network access from devices owned and / or controlled by end-users. Network access for mobile users.
2	Data network access from devices owned and / or controlled by end-users. Network access for mobile users.
2	User authentication and resource control
4	Ensuring that IT is being full considered in the development and planning of our institutions.
5	Strategic approach to developing, maintaining and upgrading the IT infrastructure needed to deliver strategic IT-based academic and business services.
5	Enterprise portals, web-based services
7	Ongoing costs of VLE / MLE systems
8	Business continuity planning
8	Risks to services and computing service personnel from inadequate funding

2004/5

In 2004/5 the survey was again carried out; this time voting (as in the 2006/7 survey) used the same scheme that Educause to rank their Top Issues. This allowed us to compare the Top Issues found by the Educause survey and those found by UCISA.

Issues which are most important to the strategic success of our members’ institutions.

Rank	Concern 2004/5 -Strategic
1	Network Security
1	Strategic Approach to Infrastructure
3	Systems resilience and availability
4	Anytime, anywhere computing
5	Learning support
6	Ensuring sufficient funding
7	IT Institution's planning
8	Business Continuity
9	Enterprise Portals

Issues which will become much more significant in the next twelve months.

Rank	Concern 2004/5 – More important in next 12 months
1	Anytime, anywhere computing
2	Extended hours
3	Enterprise Portals
4	Services Management Formal Approach
5	User Management
6	Document Management
7	Systems resilience and availability
8	Network technologies
9	Data Management

Issues consuming most of senior management time.

Rank	Concern 2004/5 – Most time
1	Strategic Approach to Infrastructure
1	IT Institution's planning
1	Staffing
4	Network Security
5	Ensuring sufficient funding
6	Determining priorities
7	New Staffing Structures
8	User Management
8	Departmental Relationships
10	Customer Centric Service

Issues using the most resources.

Rank	Concern 2004/5 – Most resource
1	Systems resilience and availability
2	Network Security
3	Network technologies
3	Learning support
5	Data Management
6	Data interfaces
7	User Management
8	Anytime, anywhere computing
9	Strategic Approach to Infrastructure
10	Enterprise Portals

We analysed also the results across all of the ways we asked our members to vote and a group of eleven issues were found to be highly ranked.

Rank	Concern 2004/5 - Overall
1	Anytime, anywhere computing
2	Systems resilience and availability
3	Network Security
4	Strategic Approach to Infrastructure
5	Learning Support
6	Network Technologies
7	Enterprise Portals
8	User Management
9	Ensuring sufficient funding
10	Data Management
11	IT in Institution's Planning

The 2004/5 survey was also used by EUNIS to determine the top issues of its membership (using the candidate issues collected by UCISA).