INFORMATION FUTURES COMMISSION

Final report of the Steering Committee

July 2008
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INTRODUCTION

“Scholars in all fields are taking advantage of the wealth of online information, tools, and services to ask new questions, create new kinds of scholarly products, and reach new audiences. The Internet lies at the core of an advanced scholarly information infrastructure to facilitate distributed, data- and information-intensive collaborative research. These developments exist within a rapidly evolving social and policy environment, as relationships shift among scholars, publishers, librarians, universities, funding agencies, businesses, and other stakeholders. Scholarship in the sciences, social sciences, and humanities is evolving, but at different rates and in different ways… This is an opportune moment to think about what we should be building.”

This quote from Professor Christine L Borgman, Professor and Presidential Chair in Information Studies at the University of California, Los Angeles is from the preface of her work on scholarship in a digital age.1

The Information Futures Commission was formed to explore this very notion: what should we be building? The work of the Commission is to develop a strategy that positions the University as a leader in the application of scholarly information and technologies to underpin next-generation research, teaching, learning and knowledge transfer, binding the strands to achieve the Growing Esteem vision.

We began by asking many questions — questions for which we knew there would not always be an obvious answer. Through the consultation process we heard many exceptional, thoughtful responses that reflect the diversity of our University community. That community has acknowledged the importance of this conversation but has also struggled with the complexity of the issues.

We begin this report by briefly describing the environment in which we operate. We follow with a summary of what we have learned from our community and from assessments of the world in which we operate and our place within that world. We provide an analysis of the key points of agreement and, more importantly, the strategic questions and difficult choices that emerged from the consultation process. These are the matters where trade-offs must be made, where challenging decisions must be taken.

We conclude with a set of principles derived from our understanding of the environment in which we operate. These principles have been applied in the development of the proposed strategy, providing the foundation for the choices we are about to make.

THE VALUE OF LONG-TERM VISION

The University of Melbourne aspires to be one of the finest universities in the world. Traditionally a defining characteristic of a great university has been a great research library — the place in which the outcomes of scholarship could be found. Yet scholarship is increasingly dependent upon technology. The Internet is fundamentally changing the way scholarly information is created, manipulated, managed, shared and published — no longer is the scholarly work always a printed artefact, no longer is information confined to a place or physical form.

If we are to be a great University we must re-imagine and redefine our scholarly information environment. The Information Futures Commission was formed to consider the future for our scholarly information, technologies and spaces within this context.

As an institution we have built and maintained our reputation over one hundred and fifty years. We have lived in a less competitive world where our well deserved reputation was a drawcard. We now face some significant challenges. Leading Australian universities are working to provide better scholarly information environments, virtual and physical, that attract researchers and research funding. Many of our students, and increasingly the next generation of leading researchers, see us as out of touch with their way of engaging with the world. We have valuable collections and archives of international significance that remain under-utilised and inadequately housed, with our library shelves stacked beyond their capacity. Our libraries and some study spaces are very well-used, but showing their age.

At this point in the University’s history we have an opportunity to make bold choices, to take a long-term view and adopt a far-sighted investment strategy which will ensure:

- better research information infrastructure, collections, technologies and skilled people, to attract the best research funding and researchers to Melbourne
- high-quality services and spaces, including our libraries, to bring our teaching and learning into the 21st century
- development of our unique strengths and treasures, using these to engage with the community, to enhance our reputation and to advance knowledge

In short, we can choose to develop a virtual and physical information environment that makes Melbourne a place that students and academics aspire to be a part of, that supports a vibrant community of scholars.

This report summarises the work of the Information Futures Commission and poses the choices we must make if we are to achieve our aspirations. Melbourne’s Scholarly Information Future Strategy offers a ten-year vision for our scholarly information environment — a vision that will position Melbourne as a leader.
THE COMMISSION’S PROCESS

Consultation process: opening up the conversation

We approached the task in two stages. The first stage consisted of a consultation process aimed at opening up the questions, exposing the complexity of the environment and the opportunities and challenges before us. We hoped to elicit a wide range of views and opinions and to explore all the significant issues.

The Vice-Chancellor launched the Commission in late January 2008 at an event attended by over 200 people. A month later the Commission published a Consultation Paper and issued an open call for submissions. Over 1000 copies of the Consultation Paper were downloaded from the web site and 450 printed copies were distributed.

During March and April we sought ideas and input from the University community and from external stakeholders. We hosted two open consultation forums for students and staff. Four Information Futures Forums featured international and national expert speakers and attracted hundreds of attendees both in person and online.

The Commission’s web site and weblog attracted 7000 visits and 14,000 pageviews. Students and staff offered comments on the blog and sent emails via the web site. An online survey asked individuals to describe their personal information seeking and management strategies and their view of an ideal future state. The survey attracted more than 130 responses, mainly from academic staff and graduate students representing 23 of the 24 categories in the Australian Research Fields, Courses and Disciplines (RFCD) classification scheme.

We consulted widely with individuals and discipline-related groups. Deans and senior faculty staff were interviewed and presentations were delivered at meetings of 15 faculty and University committees. Discussions were held with representatives of several external organisations and special-interest groups, including the Council of Australian University Librarians (CAUL) and the Council of Australian University Directors of IT (CAUDIT).

In late April six exploratory workshops involved more than 30 volunteer students and staff. We received more than 70 written submissions from faculties, groups, individuals and external organisations, including a response from University College London’s Director of Library Services, who was a recent visitor. Written submissions are published on the Information Futures web site.

The internal Expert Panel met weekly throughout this process, providing invaluable guidance, encouragement and critical feedback. We also benefited from regular contributions by Richard Katz, Vice-President of EDUCAUSE and an External Reviewer for the Commission, and early feedback from Dame Lynne Brindley, CEO of the British Library.

In total, more than 300 individuals participated in the initial consultation phase.

A progress report and draft ten-year strategy were presented at the May meeting of Academic Board. This marked the close of the initial consultation phase, during which many questions were opened up for conversation and exploration.
Second phase: focus on the future

The second phase of the Commission’s work was designed to narrow the focus onto specific strategic questions and initiatives.

Immediately following the Academic Board meeting in May, members of the University community were invited to review the draft documents. A third student-staff open forum was held. Several further submissions were received in response to the draft strategy and these are published on the Information Futures web site.

In late May the Deputy Vice-Chancellors, Deans, Associate Deans, members of Academic Board and other senior staff were invited to attend focus-group sessions and in early June meetings were held with other senior stakeholders.

Input from the review period was used to test and revise the draft documents.

The proposed ten-year strategy was endorsed by Academic Board in June 2008, prior to being presented to the University Council for final endorsement in July. An implementation plan will be submitted to the mid-year Planning and Budget Conference.
SUMMARY OF EVIDENCE

External environment

The Consultation Paper released on 29 February 2008 provided an overview of trends in the external environment. Below are selected extracts from that paper, highlighting some of the key drivers for change. The full text of the paper is available from the Information Futures web site.

The amount of information published each year continues to grow. The digital universe in 2007 was about 281 billion gigabytes in size, and predicted to double by 2011. Two-thirds of the 23,000 active, refereed scholarly journals available globally are now published online. In this digital world, printed works are produced at a greater rate than ever before. More than a thousand new books are published in English daily. The cost of editing and refereeing scholarly works remains relatively high and publishers’ prices have increased markedly in the last decade. Most universities are able to acquire only a small fraction of the world’s scholarly works, though cooperative partnerships can extend an institution’s access to academic materials.

In this digital networked world there are few barriers to self-publishing and almost anyone can access this published material. This fuels the illusion that all information is free. Public search engines, user-generated content and the increasing ubiquity of Internet-enabled computing are challenging the traditional sources and notions of authority.

The Internet has become an important research tool, with a rapid increase in the use of data, databases and datasets as both inputs to and outputs from research. Massive computing capacity enables researchers to tackle complex problems in new ways. Collaborations spanning disciplinary, organisational and national boundaries are increasing in frequency and importance. There is increasing pressure from funding agencies to ensure that research outputs and research data are made as widely available as possible through initiatives like Open Access repositories. Researchers can now download and use original data created by others, and teachers can build on objects created by others, far more easily and quickly than in the past. Digital information can be copied, transmitted and manipulated, transformed and combined cheaply from almost anywhere in the world, and the cost of transmission is usually independent of the destination. Just as libraries have been regarded as essential research infrastructure, so now are high-bandwidth networks, large data stores and high performance computing infrastructure.

The digital world has opened new possibilities for what we can do with information, what John Seely Brown calls “the social life of information” — mashups, co-creation, the melding of the amateur and professional — and in the process raised interesting questions about the structure of academic work.

The digital world is also changing what we may do with information, as defined by copyright, intellectual property laws, privacy and other considerations. It seems likely that the regulatory environment will become more complex, at least in the medium term.

Teaching spaces can now enable more than a one-way lecture and are equipped with multimedia equipment and furniture designed for interaction and group work. Learning spaces and libraries are no longer reserved exclusively for silent, solo endeavours: increasingly, students prefer and are encouraged to work collaboratively, requiring a mix of spaces that enable silent, quiet or loud study modes and that are flexible enough to adapt to different purposes as needed.
Many universities are grappling with these issues. Few have taken an holistic view of the scholarly information and communication process, instead looking through a particular lens at the disruptive changes that are occurring. Some are questioning what their library future should be, others what approach they wish to take to Open Access, many are beginning to worry about the emerging challenges of research data management and curation, and others are questioning what level of investment to make in information infrastructure, in buildings or how to structure their services. Each institution is crafting its own solution based upon its own research and teaching priorities, its history, its current state, its values and philosophy. The familiar and constant models of the past are changing irrevocably, with no consistency emerging thus far.

For example Harvard, across both its Faculty of Arts and Sciences and its Law School, has mandated Open Access publishing. MIT has its Open CourseWare initiative. University College London is creating a new building to house its special collections of early printed books, manuscripts and archives, relieving pressure on current library spaces to create more collaborative and quiet learning spaces. ANU is moving 800,000 items into leased off-site storage to manage its space pressures. UC Berkeley has built a new Music Library and East Asian Studies Library through US$60 million in philanthropy. Stanford University is reducing its Engineering Library to almost a third of its previous size: in the new library all reference works and journals will be digital, 40,000 printed books will be replaced by 40,000 e-books and 12,000 printed books, study spaces are smaller and the number of subject-specialist information professionals will more than double.

It seems reasonably certain that the increasing pace of change in scholarly practices will demand in response a high degree of flexibility — in spaces, in services, in technology, in the structure of information itself. The University of Melbourne is unlikely to influence most of the ways in which the information environment is created and interacts globally with society, but we are in a position to choose which of these changes require our response, either in advance or as they arise.

Current state

The University of Melbourne today has the opportunity to embrace and lead change in the knowledge-driven era. While evidence shows that Melbourne students are generally well equipped and knowledgeable about the digital world, we must remain vigilant and mindful of the need for equitable access to state-of-the-art information and technology.

Our academic staff are pathfinders of global stature in the effective uses of digital information, technologies and methods to support their research. Melbourne researchers already collaborate globally over networks and grids on a wide variety of technology platforms, including work with UC San Diego to demonstrate the potential of the Optiportal to produce and transmit high-resolution data displays in real time across the planet.

Notwithstanding these demonstrable and exciting achievements, the University's leadership position in this realm is at risk.

To understand how Melbourne compares with Australian and overseas institutions we reviewed statistical data about usage and resource levels of services, size and usage of collections, and investment in collections and infrastructure.
People and capabilities

In general Melbourne’s students have good access to technologies such as personal computers, mobile phones, MP3 players and the Internet. While the use of such technologies for learning is reasonably well accepted at Melbourne, high overall levels of technology ownership and use do not necessarily mean that all students have the same level of access or capability. Equity will continue to be an important consideration in our planning.

Library staffing levels at Melbourne are lower than those at other Group of Eight (Go8) universities, and declining, though it is becoming more difficult to benchmark these levels as there is increasing divergence in what constitutes library services. In 2006 Monash, Queensland and Sydney had between 28 and 46 more library staff than Melbourne, with the ratio of library staff per campus population member placing Melbourne below Sydney, Queensland and ANU. These staffing levels, coupled with the large number of libraries we currently sustain (19), are evidenced in fewer library opening hours (almost 20 hours per week less than Monash).

Compared with other institutions, our library expenditure per user is lower (about 2.65 per cent of total university expenditure in 2006 compared with 3.16 per cent at Sydney, 3.76 per cent at Queensland and 3.81 per cent at Monash) although Melbourne's libraries are among the most heavily used. We are delivering a high volume of transactional or commodity services: loans, physical spaces, online catalogue and search. We lent more than 1 million items in 2006 and had more than 3 million visitors to our physical libraries. Most users visit our libraries daily or 2-4 times per week, in person or online, and Melbourne scholars borrowed almost 40 items per full time equivalent scholar in 2006 compared to 36 at Sydney and Monash, 33 at Queensland and 25 at ANU. Almost all Melbourne's libraries are open to the public.

External trends indicate the need for higher-level ‘new media literacy’ competency — knowledge and skills in areas such as copyright, privacy, ethical behavior, personal identity management, evaluation of source quality, synthesis of ideas and information. Harvard and MIT are (collaboratively) exploring information literacy education for undergraduates in terms of privacy, authorship and ownership, credibility and participation in scholarship. Postgraduate students are currently the most frequent users of information literacy and reference enquiry services at Melbourne.

The overall quality of our library services this year slipped from the top 50 per cent band for Australian universities (we now rank slightly below the median). Our library staff are regarded positively by library users, who would like to see improvements in the availability of computer workstations, the quality of the physical environment and the availability of seating.

In 2006 University IT staffing levels at Melbourne were generally equivalent to those at peer institutions. Whilst we appear to be lagging in provision of IT support for students this is likely to change over the next few years as learning precincts are redeveloped and the Melbourne Student Services Model takes effect.

In the emerging area of e-research it is clear that Monash, Queensland and ANU have invested much more heavily in the relevant information professionals and infrastructure. At Monash there are approximately 60 library and information professionals across the e-research group, the library and the IT division, specifically to support e-research initiatives, compared with fewer than ten staff at Melbourne.
Information and collections

Our library collections are acquired primarily through the Materials Vote which is indexed against CPI and enhanced through bequests and trust funds. The purchasing power of the Materials Vote is declining. We have $3-5 million less buying power than major Australian competitors, and we are slipping further behind. Library acquisition patterns are changing: for example, many journals are now only available digitally. Open Access publishing to date has not removed the need to purchase commercial digital titles. External studies have shown that people who use digital sources heavily are also likely to be heavy users of print materials. Our scholarly collections need to support this mixed-media approach to scholarship.

Unlike most of our Australian competitors we have collections which remain unavailable through our online catalogue. We also have significant collections in need of appropriate curation. Funding is needed for cataloguing and preservation of archives, special collections and cultural collections. Active management and development of the University’s library collections, special collections and cultural collections could result in higher usage rates and greater value to scholars and the University. For example, library collections could be better leveraged in curriculum design; and improvements in the extent and quality of our catalogue records could help to expose little-used but significant collections to the scholars who need them.

Physical space is a constraining factor in the storage, use and management of all our collections. Our shelves are filled to capacity, so each new purchase requires that we place items into storage.

A significant amount of Melbourne’s research output is listed in public-access databases such as the Australian Digital Theses project and the ARROW catalogue, which link to source documents held in our own ePrints repository, other Melbourne systems or elsewhere. Compared to other universities we tend to have more records in these cooperative databases. The current strategy of providing bibliographic data (regardless of whether the full text is available) remains sound, providing a public profile for Melbourne scholars in multiple environments that are highly searchable.

Like many of our peers we have yet to grapple with the challenges of research data management, though this is an area in which we have particular expertise that could be applied.

The University participates in several inter-library lending schemes and shared repositories. There is demonstrable value in continuing these cooperative arrangements, as we are a net borrower from other institutions.

The University of Melbourne has some significant collections and outstanding academic staff. Currently, declining funding is hampering our ability to make scarce and irreplaceable collections accessible or even discoverable through digital means. This disadvantages our academic staff and students as they attempt to keep up with the rising standards and output expectations of scholarship.

Infrastructure

This area has been the most neglected. Spaces for student collaborative and quiet study have been eroded as the University has grown and expanding print collections have replaced student space with shelving. Recently we have seen the creation of exciting, contemporary technology-enriched learning spaces, yet our ageing library spaces have remained inflexible and inadequate.
The Eastern Precinct development provides the first opportunity to redress this in many years. We have insufficient space for collections to be housed and managed effectively. Availability in our libraries of computer workstations and loanable laptops has repeatedly been identified by our students as something they highly value but we struggle to meet demand.

Some of the emerging student centres and learning space developments, such as that in Engineering, may relieve pressure on libraries to provide basic information services and learning spaces, but other changes to the campus will also be required in order to meet student needs. Each new staffed student service point on campus increases our costs, potentially eroding the hours that the service point may be open. Each un-staffed facility requires that thought be given to managing any security and safety matters.

There will need to be a balance struck between the types of services and spaces we wish to provide for our students. At some universities (Engineering at Stanford for example) libraries are being created that are largely technology-enriched learning spaces, with extensive digital collections, limited print collections and library and information professionals on hand to assist. The relationships between library spaces, learning spaces, computer laboratories and social spaces must be considered.

E-research is an emerging and rapidly developing field. The University has invested in our network to raise it to an appropriate standard but has made limited investment to date in provision of the necessary infrastructure to support e-research more broadly, specifically in data storage and management services for researchers, high performance computing (HPC) facilities and associated services. While we collaborate in relevant national and state initiatives, such as AARNet and the Victorian eResearch Strategic Initiative (VeRSI), other Australian universities and international competitors are investing heavily (particularly in life sciences and physical sciences).

We are the only Group of Eight university which does not have an appropriate identity and access management system to effectively participate in the emerging Australian Access Federation, an initiative designed to enable our researchers to engage in international research collaboration. A robust, flexible identity management system would also enable the implementation of other collaboration tools. It is reasonably clear that Melbourne must invest soon or be left behind in research prestige, competitive grants, commercialisation and other opportunities. This requires a whole-of-University approach coupled with collaboration with external partners.

Melbourne has relied largely on a single commercial vendor for provision of its campus-wide learning management system. Recently we have begun to leverage our membership of the SAKAI initiative and added internally-developed tools to create an extended “LMS+” environment. This brings our LMS technology strategy into line with similar institutions in Australia and North America.

Videoconferencing is well supported in our teaching spaces; competitor universities are enabling VOIP and videoconferencing at desktop level and Melbourne will be doing so over the next two years. We have recently acquired an OptiPortal capable of high-bandwidth videoconferencing.

Wireless access on campus is currently being improved, bringing Melbourne up to the standard most Australian universities have enjoyed for some time.
FEEDBACK FROM CONSULTATION ACTIVITIES

For an understanding of scholars’ aspirations and expectations we drew upon previously-conducted studies and on the preliminary results of a survey conducted by the Information Futures Commission. The survey garnered 136 responses, mainly from academic staff and postgraduate research students. We also reviewed more than 70 formal submissions and the outputs from the exploratory workshops held during April.

The hundreds of participants in this process expressed diverse opinions and experiences, confirming the Commission’s expectation that there is no single correct answer to the complex, interlinked questions posed in the Consultation Paper. A long-term University strategy for scholarly information will need to accommodate discipline-related differences and a range of sometimes conflicting priorities.

Arising from the various consultation activities some broad themes and tensions are outlined below.

The written submissions and other information are available from the Commission's web site. They will provide valuable background to the development of more detailed plans.

People

“Ten years is a long time in this rapidly expanding field and the key messages are to be ready for change, to develop a fluency and agility in our thinking that can then be enabled by the technology. This is a human endeavour before anything else.”
(written submission: Faculty of the VCA)

While a significant proportion of scholars assume that online access to information will be ubiquitous, cheap and desirable in the future, many today feel overwhelmed by the volume of information available.

[In my ideal future] “It is all digital! At the moment about 90% is digital. In ten years 100% will be digital. The tools, such as wikis, will be easier to use than they are currently... I will have less passwords (I currently have 40-50 that I use regularly i.e. once a month and 10-20 that I use daily). Only some of my information will be held by my organisation. I imagine that most of it will be ‘out there’ but it will be clear who the originator of it is and who has contributed to it is. I think that the idea of ‘ownership’ will become more fluid as more and more people collaborate and contribute to scholarly information. I think that there will be many more ‘beta’ products that people use quite happily, rather than full production products. I suspect that I will very quickly feel that undergrads and postgrads have the technology edge over older researchers.”
(survey response: physics researcher)
There is some demand for services that assist with filtering new information and with organizing one’s personal collection of information and records. Students as well as researchers said they needed skills in this type of scholarly literacy, though there is some divergence of opinion about how such training should be provided.

[In an ideal future] “All students will be properly trained in the use of the technologies they need to use. Research students especially will be given substantial, compulsory & in-depth training.”
(survey response: postgraduate research student, arts)

“Students come to the University skilled in manipulating technology but these skills do not always translate into the ability to navigate their way thorough the world of refereed knowledge. The role of the Library and its staff is crucial in this area.”
(written submission: Friends of the Baillieu)

“The only limit to how much information I can access is my ability to read and process it! Maybe the key thing is to assist personal development to handle large amounts of information.”
(survey response: postgraduate research student, sociology)

“...in 2003-2004, Academic Board had supported the embedding of information literacy in course offerings and this may need to be re-examined as some students struggle with navigating their way through the online materials, finding it difficult to evaluate and synthesise the relevant information. It was important to avoid making assumptions about the competence and confidence of students in accessing the University’s vast resources. It was suggested that this information literacy skill could be built into breadth subjects.”
(written submission: Melbourne Experience Committee)

To support research, the concept of creating a cadre of ‘information professional’ staff found some support. These specialists would have expertise in various aspects of research-related information management and could work in partnership with researchers to provide professional expertise. This included location and synthesis of relevant research information; and the management, storage and dissemination of data and information produced by research activities. Such a view was expressed in several faculty submissions and through comments in workshops, interviews and the survey. Some written submissions described the role of ‘information professionals’ in providing links in a world where research is increasingly conducted across disciplines.

“The increasingly important role of information specialists in providing education and training in health information tools and applications was noted. There is considerable value in including ‘librarians’ more directly in advising on information needs associated with curriculum development initiatives...”
(written submission: Faculty of Medicine Dentistry and Health Sciences)
[In an ideal future] “I can specify the areas of interest to me (not generally, but quite specifically) and someone else will do the setting up of alert services... I could also have a personal version of the services that are most critical in my area, so it would come into my inbox instead of me having to go to access it somewhere else.”
(survey response: academic, law)

Research data management was mentioned in many written submissions, particularly referring to the need for policy, guidelines and tools to be available to assist in managing research data.

“Good tools for organisation of source materials—tagging, annotation, searching, visualisation. Easy annotation of pdf articles, web pages etc on an ultraportable tablet computer. Voice recognition software that works. Bibliographic / citation tools that work with legal citation conventions.”
(survey response: academic, law)

“One of the main problems at the moment is how to keep track of all the information. This could be improved with sophisticated indexing and file sorting programs, a smarter computer that can group information and with an ability to transfer very large files easily.”
(survey response: postgraduate research student, zoology)

Collaboration, both local and global, and face-to-face contact with colleagues are seen as important to the practice of research. Survey respondents cited these interactions as sources of inspiration, current information and critical feedback about ideas. Some survey respondents noted that regular interaction must be balanced by having a quiet, private space for thinking and writing.

[In an ideal future] “I have an office to myself with good online search facilities and library access. Use video conferencing from my desktop to talk to colleagues as well as visit regularly in person. I also have a retreat away from e-mail and video conferencing where I can actually do work. So my ideal research environment is a mix of good communications with colleagues and access to journals etc mixed with personal interaction and the opportunity to retreat to think.”
(survey response: academic, statistics)

“It would be a far better use of resources if the universities made space and conditions available for the honorary fellows to meet and discuss what they might contribute to the university community... We could be involved through mentoring systems, through assistance with publication, and through lecturing. It would be a boon to have finance available for travel to conferences... Buying books and journals should be subsidised. It should be remembered that older scholars are now often female and were not in the full workforce in the days of prejudice against them. They don’t have the money to do all these things.”
(survey response: retired academic, music)

“My most engaging and interesting scholarly activity is the participation in conferences and the opportunity to interact directly with my (international) peers. I do not think much will change that.”
(survey response: researcher, mathematics)
[Ten years from now] “The connection at conferences both here and overseas will remain crucial—these are melting-pots of discussion, sharing and idea generation that are conducted away from the distractions of your normal work environment. My electronic world will be more on-line, all-the-time, but with me in more control (the expectation of immediate responses will have gone). There will be far more collaborative work—the demise of single-authored works will be rapid as networks and collaboration become more important. Journals are now entirely on-line and books are on there way to being the same—I do not buy hard copies of anything unless there is no alternative. We now construct multi-media based research reports. Face-to-face classes remain important but are more internationally connected with the aid of technology.”
(survey response: academic, education)

Written submissions from groups and individuals stressed the need for quiet study space and argued that the provision of such space on campus should not be sacrificed in order to provide collaborative or social spaces. Some contributors questioned whether libraries should provide collaborative spaces at all.

[My ideal scholarly environment would include] “Having a decent collection of documents (books, journals and manuscripts) housed ON SITE and properly organised, with a library staff with some knowledge of what the collection contained to assist me. Decent, for a scholar whose work is based in the humanities might usefully be defined as a collection of 5-6 million volumes. Having a QUIET and SECURE place to work IN THE LIBRARY, NOT a COLLABORATIVE DISCUSSION AREA WITH COFFEE FACILITIES. Electronic access to appropriate sources should be fast and efficient from any terminal in the world. Supersearch should be VASTLY IMPROVED or discarded. It’s a disaster. There should be terminals on every desk in every part of every Library branch, INCLUDING a vastly enhanced special collections area in the central library, where the current seating is a disgrace. The newspaper/unbound periodicals area would be staffed, properly shelved and devoid of couches for sleeping.”
(survey response: researcher, history; author’s own emphasis)

[In the future] “I would imagine working in an open plan lab area. This area would be attractive and multifunctional (quiet areas for writing, open areas for presentations and meetings). From this area I would be able to access our secure internal database and the web... This space feels light and open with greenery. [I currently share a windowless office surrounded by piles of paper!] I would hope that my research lab would be virtually paperless and all staff/students would have state of the art MacBooks with reliable broadband wireless connection. Instead of poster boards we would have large interactive LCD screens for displaying relevant info and publications and artwork! Lecture theaters would have top quality and integrated sound and visual display facilities that were ‘fool proof’.”
(survey response: researcher, psychiatry)
Information

Much comment was made about whether it is more desirable to acquire physical or digital assets for our libraries, museums, archives and cultural collections. Clearly the University cannot make a single ‘either/or’ choice that applies to all academic disciplines and scholarly works. Rather, we require a collection development strategy that takes into account the differences in research practice, teaching practice, usage of existing collections, type of collections, availability of source material and the usefulness and cost-effectiveness of different formats.

“Unless a technological break-through makes digital the preferred format for books consulted for their sustained argument or narrative, the demand for physical books, we believe, will long continue.”
(written submission: Libraries Subcommittee, Committee of Convocation)

“Access to more scientific journals. About 15% of the papers I need are not carried by the University. It is embarrassing to me and to the institution to have to email the corresponding author and beg for a copy. It make the University look cheap and gives the impression that we are not a research focussed institution. I know it is expensive, but I suggest that in the long term the cost is greater in terms of moral, international reputation, research output and ultimately in recruiting and keeping the top researchers in the world.”
(survey response: researcher, physics)

“The staff and students of the Faculty of Arts need daily access to the latest developments in digital information delivery for both teaching and research. At the same time, though, they also need to continue to engage equally deeply with current and archival print materials published across a vast range of specialist areas.”
(written submission: Library Users Committee, Faculty of Arts)

Most written submissions made the point that at this stage it is impossible to choose between print and digital formats — both are required. There were clear differences between the disciplines in their dependence on print.

Open Access was mentioned in multiple submissions. There were differences in the level of acceptance of this new avenue for publishing scholarly works. Questions were raised of quality assurance, copyright and intellectual property, and recognition of publications in academic performance and rankings. It was suggested that the University of Melbourne lead a national discussion on these topics.

“Ten years from now all data and scholarly work will be stored in interactive cross-referenced databases. Easy direct public access will be essential an essential feature... Quality will be maintained by peer review critics being annotated along side the information, and a rejoinder from the author... Great institutions will be measured by the frequency they are utilised as a source of information — how many times their information is visited online.”
(survey response: researcher, molecular biology)
“While this [Open Access] movement is stronger in some areas (politics, social science, media) than in others, it is likely that the constraints of a publishing market whose prices, according to the EC report, have risen at two to three hundred per cent above inflation for two decades, will lead to an increase in open-access solutions.

... Some academic are committed to open access, but are constrained by the lack of recognition for open access in DEST and RQF rankings... This again cannot be achieved by a single institution, but the University of Melbourne could have a lead role in negotiating new recognition factors for the increasingly likely future of electronic-only publishing.”

(written submission: Library Users Committee, Faculty of Arts)

Digitisation of content was suggested by a number of submissions and a University-wide approach was proposed.

**Infrastructure**

There is demand for high-performance computing facilities for mathematics, physical sciences, earth sciences, biological sciences and medical disciplines. Several written submissions emphasised the need for increased bandwidth to enable videoconferencing, the exchange of data and other collaborative activities. Ubiquitous high-bandwidth network access was seen as important. Many survey respondents predicted that in 10 years they would use desktop videoconferencing for collaboration as easily as they currently use email and web browsers.

“There are some common collaborative services and infrastructure that are often built by researchers where centralised service provision could occur. These include data storage (across the university there will be an increase from the existing hundreds of terabytes of research data to hundreds of petabytes, over the next ten years), computational power, wikis, blogs, webpages and virtual organisations.”

(written submission: eResearch Coffee Network)

The need to increase the amount of data storage available to researchers was made clear in written submissions.

“University housed (and maintained) computer back-up facilities. If Google can offer me 6Gb for mere email—the University should be able to sort out a way of backing up my scholarly information.”

(survey response: researcher, physics)

“I should have a readily accessible and massive and password protected (i.e. secure) online resource for storing resources, that is maintained and backed up regularly, which I can access from home/work/lecture theatres/overseas without bandwidth restriction via a secure network. Printing should be restricted or made more expensive to discourage manufacture and storage of hardcopies in favour of soft-versions of knowledge. And there should be ways of accessing digital material in manipulatable format by touchscreens, keyboards, mouse, laser devices... I should be able to get articles for free or pay a minimal licensing fee for access to information.”

(survey response: postgraduate research student, educational management)
[Ten years from now] “I would have a personal UoM website (with public and private aspects) which contained my email, diary, working documents. I could access this website remotely and could use it as a secure ftp site... I need access to high performance computing facilities and to have these facilities well managed and supported. I need to be able to move large amounts of data to and from the UoM via secure sites.”
(survey response: researcher, psychiatry)

Several different versions of ‘library’ were offered: one big central library; several discipline-specific libraries; a new library to house rare and special collections, research collections and display space. There was no clear agreement among the written submissions, other than an underlying acknowledgement that library and study spaces on campus need improvement.

“I think the biggest single barrier to scholarly activity in Melbourne University is the plethora of separate libraries... [that] discourage people from exploring the world outside their own narrow mind space. For those of us who work in a more interdisciplinary way, our resource materials are spread across the campus and all the way out to Bundoora.”
(survey response: researcher, geography)

“The re-establishment of a dental library, with expert and interested staff, in our building...”
(survey response: academic staff member, periodontics)

“As a separate issue, the Baillieu Library is in great need of refurbishment. Its approaching Jubilee year provides an opportunity for the University to seek funding and undertake the necessary works as well as the long-term planning to construct or create such library facilities as befit a great University of the future.”
(written submission: Libraries Subcommittee, Committee of Convocation)

“There is a pressing need for a newly commissioned building to stand as an iconic architectural statement highlighting and ensuring adequate provision for this priceless cultural legacy, a legacy that could moreover play an increasingly important role in the processes of knowledge transfer and in marketing the University to a wider and increasingly international audience.”
(written submission: Library Users Committee, Faculty of Arts)

Most survey respondents seemed to assume that online access to information would become ubiquitous in the future. ‘Ease of use’ for online systems was a common theme in responses to the survey and in our conversations with individuals.

[In my ideal scholarly information environment] “I would have a large compute[r] screen with very easy pull-down screens to all of the online journals I use... There would be no passwords, and no complicated cross-linkages between different databases. [There] would be a daily-updated listing of all the recently published
papers in my fields and I could just click on them at will without having to navigate various databases. I would have on-line access to all the textbooks and research monographs in my field. I would have a much improved Skype with high-quality video conferencing to my colleagues around the world, and it would be possible to easily share documents, point to diagrams, and write mathematical equations while video conferencing.”
(survey response: researcher, engineering)

“I imagine that in the future... the information in my computer will be linked in more effective ways: thus, for example, I would [see] a notice of a new article in a journal alert, and I could click to download it and store it in a database, instead of the multiple steps required now. I imagine ‘smarter’ search tools that weed out a lot of the junk that pops up during searches of any kind right now.”
(survey response: academic, history)

“It is very frustrating to find a research article and then have to go through a 5-screen process to get a document that I should have just been able to ‘click on’. I know it is possible, since it was the case in my last two employers...”
(survey response: researcher, physics)

[An ideal scholarly information environment is] “well-integrated, so that I don’t have to replicate different requests/tasks in order to gain access to information (but this is user-friendly and I don’t need a PhD in knowledge management or IT to do it).”
(survey response: academic, sociology)

“Better, less ‘brittle’ search methods would be good, to reduce the ‘guess what keyword this database likes’ problem.”
(survey response: academic, neuroscience)

[In the future] “Instead of having to deal with external publishers, the library would allow users to see what new journal TOC had been received and to run customised searches on all new journal contents. So the UoM library would be the sole portal and organiser of info. It would also good to have a comprehensive ebook library of major historical and recent textbooks. Themis is a good start but interaction with UoM administration would be via a secure and comprehensive interface.”
(survey response: researcher, psychiatry)
Into the future

More than one written submission suggested the Information Futures Commission was only the start of a long-term conversation supported by policy development, further research and continuing change.

“To some extent we can plan for the unexpected, but the more we plan, the less adaptable we will be. Maintaining a permanent think-tank and an open, public debate on information and communication futures should be integral to the future life of the University.”
(written submission: Library Users Committee, Faculty of Arts)

“The FMDHS group sees these plans in the context of a continuum of information and knowledge and encourages the University to adopt a more unified approach including establishing a Centre for Information Science Research and Education (Informatics) and developing a University-wide knowledge management plan.”
(written submission: Faculty of Medicine Dentistry and Health Sciences)
DISTINGUISHING OURSELVES

Melbourne’s staff and students offered many ideas for projects that could showcase the University’s scholarly collections, build our expertise and build strong links with external communities. As a taste of our colleagues’ creativity, here are seven examples of possible projects and activities.

Research

Retrieving our rivers:

In the course of his research Iven Mareels, now Dean of Engineering, collected a unique record of historical data on Australian river flows. This data is held in a digital archive which today is difficult to access and read. Retrieving this data into a usable form and making it available to scholars and the public to build upon, is of potentially great significance for understanding the effects of climate change and for water management planning.

Digging up treasures:

We have in our collections artefacts that we cannot identify or comprehend, for example a beautifully bound 14th century Ethiopian manuscript written in a language that we have not been able to translate. Imagine the possibilities in digitising part or all of such artefacts and putting them on the web for other scholars and the public to identify, engage with, and collectively build knowledge.

Learning and teaching

Student innovation laboratory:

Students could undertake a university breadth subject that encourages innovative information and/or technology development and use by the participating students. The innovation could take place in a relatively public glass walled ‘laboratory’ visible to bystanders and via web accessible student videos.

Celebrating our creativity:

The VCA holds an extensive archive of short films, including works by former students who have gone on to successful careers as film makers and actors. Digitising selected works from this collection would allow these nationally significant, unique materials to be used in teaching, learning and research.

Knowledge transfer

Student TV:

The University could showcase student creativity and thinking via video interviews of students on their thoughts of our place in the world and the big issues of the day. The videos would be created by other students and disseminated via the web.
Virtual reconciliation:

Within the University’s collections are:

“vast amounts of material of immense value to researchers, scholars and senior [indigenous] community representatives... The University is not in a position to properly understand this material if it cannot engage with knowledge holders across other cultures... Further work could be done to support real-time communication between remote communities and the University that would support conversations, teaching and research about particular items or cultural contexts.”
(written submission: Associate Professor Robyn Sloggett)

Enriching our publications:

The University discussed with Melbourne University Press a project that uses a digital portal to create a community in combination with a book or set of publications around one of Melbourne’s rich collections. Ideally this would build on a collection already earmarked for use in research and teaching, such as the early maps of Melbourne, Protector of Aborigines reports, or crime collections. Alternatively, this type of project could focus on a theme such as human rights and bring together resources from diverse collections, perhaps accompanied by public lectures, a new publication and other activities.
SUMMARY OF LEARNINGS

People
The quality of the information professionals at Melbourne is generally high, though new capabilities are required — we need information professionals with discipline breadth and deep information/IT knowledge and skills to support our researchers, teachers and students as they navigate an increasingly complex information landscape.

Information
We have rare, valuable special and cultural collections which will prove to be important differentiators of a great research university. Many of these collections remain un-catalogued and poorly housed.

We have a unique, largely untapped opportunity to improve our profile, reputation, and rankings by making appropriately accessible our high-quality research, teaching materials, student works and our unique special and cultural collections.

Infrastructure
Whilst our fixed and wireless networks have been significantly improved we lack the scholarly information infrastructure to support internationally competitive research. Our needs range from basic infrastructure through to research data management and collections. We still require:

- research data management services and data storage
- adequate physical and digital collections to support research
- cataloguing that enables discovery, citation and management of those collections
- authentication and authorisation systems
- adequate data centre space (already planned and funded)

Our digital learning environment, LMS+, has improved significantly and we have developed some innovative high-quality learning centres. Whilst we have spent significant effort and resources on improving the student experience, we have neglected our libraries which receive 3 million visits per year (predominantly from students).

In a national client survey (May 2008) the overall performance of our libraries was ranked in the third quartile (bottom half) of Australian university libraries.

In that survey our clients were asked about what was important to them and their impression of performance. The most significant gaps between importance and performance are, in ranked order:

1. access to a computer
2. easy-to-use searching tools
3. adequate print and digital resources  
4. adequate seating  
5. adequate opening hours

**Investment**

We invest less than our national competitors (though investment needs to be considered within the context of institutional imperatives, discipline mix, complexity and structures).

Melbourne lends more volumes per population member than any Australian university and has more branches (19), yet library investment measured in dollars per population member showed Melbourne ranked 11th against Australian competitors in 1996, 12th in 2003 and 13th in 2006. Monash spent in total $9 million more than Melbourne on its libraries in 2006, $94 per EFTSL more, and UQ spent $220 more per EFTSL.

Expenditure on library collections shows Melbourne ranked 4th among Australian universities in 2006 at $12.25 million compared with the leader, Monash, at $15 million.

Expenditure on IT is more difficult to compare because of differences in service models but we are aware that one Group of Eight member spent $4 million per annum more than Melbourne on central IT in 2007. Recent work on detailed benchmarking showed Melbourne spends $858 per EFTSL on central matched IT activities compared to $948 and $1118 at two other Group of Eight universities.

**Priorities**

Evidence from the consultation process, surveys and related information reflects two dominant, and sometimes competing, cultures within the University community.

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<thead>
<tr>
<th>Our academics want…</th>
<th>Our students want…</th>
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<tbody>
<tr>
<td></td>
<td>A mix of physical and digital collections — and our students want more resources that are relevant</td>
</tr>
<tr>
<td>Easy to use searching tools</td>
<td>More computers in libraries</td>
</tr>
<tr>
<td>Ongoing development of scholarly literacy for students, staff</td>
<td>More seating in libraries</td>
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<tr>
<td>A new ‘type’ of information professional to support them in research, teaching and learning</td>
<td></td>
</tr>
<tr>
<td>Research data management services and the infrastructure for research and collaboration</td>
<td>Longer library opening hours</td>
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</table>
STRATEGIC QUESTIONS AND DIFFICULT CHOICES

“The data deluge is affecting scholarship and learning in ways both subtle and profound.”

In shaping a strategy for the next decade we posed some key strategic questions to inform our choices. In a decade’s time how do we believe:

- researchers across different disciplines will access, analyse, create and disseminate research data, research outputs, creative works?
- teachers will create, synthesise and use scholarly information and scholarly works in their teaching?
- learners will access, analyse, use, synthesise and create scholarly information and scholarly works?
- the broader community will seek to engage with and be part of the University’s scholarship?

What will our University community look like? What will the mix of students be? How will they seek to access our services, to participate in learning, to do research? What technologies will they bring to the campus? How will our physical campus have changed?

The answers to these questions must shape the way in which we address the difficult choices below. It may not be possible to answer these questions immediately — rather, the assumptions we make now will shape our eventual response.

From the consultation process there have emerged some clear areas of agreement about what is important, but strong divergence about how each should be addressed:

- Ongoing development of scholarly literacy for students, embedded within the curriculum, and for staff (mentioned positively in 19 submissions)
- Mix of physical and digital collections (mentioned in 31 submissions: 19 mentioned physical collections positively, 12 mentioned digital and 10 expressed a need for both)
- Research data management services (17 submissions)
- The need for a new type of staff member, the ‘scholar librarian for a digital age’ or informatics professional to work closely with researchers (17 submissions)
- Infrastructure for research and collaboration (17 submissions mentioned data storage, 7 identity management, 9 high bandwidth networks, 8 collaboration tools)

Some choices are less clear. The questions below are interdependent, and the answer to one question may constrain the possibilities for another.

Difficult choices

The difficulty is that we want it all. The reality is that we must make choices and set priorities. The 10-year Scholarly Information Future Strategy recommended by the Information Futures Commission addresses these choices.

1. **What type of library/libraries should we have?**

The choices here are multi-faceted and are not mutually exclusive. They may be broadly categorised across the following dimensions:

| Co-located with teaching spaces                | Located elsewhere               |
| Specific cognate disciplines                  | Multidisciplinary                |
| Undergraduate                                  | Graduate/research               |
| Fewer libraries, longer opening hours, full range of services | More libraries, small branches located within academic departments/faculties |

2. **What should be in the libraries?**

Many of the University’s library, special and cultural collections are of breathtaking quality and scope. In light of the shortcomings described elsewhere in this report, we need to revisit long-standing questions about the mission and scope of those collections.

Here, too, the choices are multi-faceted and not mutually exclusive. Can we continue making our collections available to any and all in higher education, or will we need to restrict access to a far smaller number of accredited scholars? Should we make our collections available to all academic libraries? Would we realise better value by working only with specific library trading partners?

| Collection spaces                  | Study spaces               |
| Open shelving (fewer items)        | Closed access on campus (more items) |
| Any time, anywhere access          | Physical characteristics and nature of books and artefacts |
| Physical browsability and serendipity | Online tools for sophisticated searching, recommendation and discovery |
| Quiet study spaces                 | Collaborative study spaces (may include teaching areas) |
| Ownership                          | Shared resources            |
3. **Who can use our libraries?**

There will need to be a hierarchy of criteria to determine who can access our libraries, for example by type of user and collection.

<table>
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<tr>
<th>The world</th>
<th>Select scholars</th>
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<tbody>
<tr>
<td>All libraries and their collections</td>
<td>Specific libraries and/or collections</td>
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</table>

4. **How ‘open’ do we want to be with our scholarly output?**

The choices we make here will determine how and whether we maximise the value and impact of our scholarship. The main considerations are who would have access to the products of our scholarship, whether we seek financial return from licensing or other arrangements, and our approach to determining the role of publications in academic recognition and rankings. Varying combinations of ‘openness’ are available for:

- Publishing our research output (articles, monographs, theses etc) for general access
- Making our research data available to other researchers
- Making our teaching and learning materials freely available
- Licensing and/or commercialising some or all of these

5. **How should the University organise itself to achieve our preferred information future?**

What types of people do we need to achieve our preferred information future? (skills, nature of involvement with research and teaching) Where should they be located?

What types of organisational structures should we have in place to provide the services, information, collections and infrastructure we need to support research? Teaching and learning? Knowledge transfer?

How should this be funded?

<table>
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<tr>
<th>Speaking with one voice, as a single institution</th>
<th>Devolved decisions, local autonomy</th>
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<tr>
<td>Decentralised services and infrastructure</td>
<td>Centrally managed</td>
</tr>
<tr>
<td>University investment</td>
<td>Local investment</td>
</tr>
<tr>
<td>Interoperability</td>
<td>Distinctiveness, uniqueness</td>
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<tr>
<td>Teaching</td>
<td>Research</td>
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<tr>
<td>Ownership</td>
<td>Collaboration, partnerships</td>
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In traditional models, decentralisation places services and resources close to the teachers, students and researchers who use them; and centralised management can provide economies of scale in building, preserving and delivering those resources and services.

Today information technologies enable us to consider new organisational models. With a mandate to strengthen our scholarly collections and resources, including funding, a ‘new federal’ approach could deliver the benefits of local resources while lowering the overall cost to the University of providing them.
It is clear that we live in a rapidly changing environment, an environment in which globalisation of education and its infrastructure is the norm. From our consultation process it is also evident that we must deal with tensions between emerging client needs, existing values and competing demands, and do so within finite resources.

It is against this backdrop that the following principles are proposed. Each of these principles shape and inform the choices we have proposed.

**To deal with a rapidly changing environment we will:**

1. **Focus on our research strengths, using our information environment to build stronger cross-disciplinary links.**
   
   We will develop our information and infrastructure in ways that are useful across disciplines, creating mechanisms to make collaboration easy while supporting our research strengths.
   
   This means that we will:
   
   - Describe our information in ways that facilitate sharing across disciplines whilst not losing the richness of discipline specificity
   - Store our data in ways that make collaboration and sharing easy
   - Invest in our areas of research strength

2. **Harness the diverse insights and innovative ideas of each new generation of students.**
   
   We will involve our students in implementing change, acknowledging that they are both consumers and producers of new media and scholarly information. Informed by the pedagogy of peer support we will engage students in the design, delivery and evaluation of student-facing services to generate more powerful learning outcomes and to nurture student leadership.
   
   This means that we will:
   
   - Use in-curriculum student projects more effectively to innovate and develop new services
   - Employ more students to provide and develop scholarly information services

3. **Work as partners across academic and professional boundaries to achieve our aims.**
   
   We will use the expertise that exists across different parts of the organisation rather than replicate professional knowledge and skills in each organisational unit.
   
   This means that we will:
   
   - Continue to reassess the balance between information professionals employed within departments, schools, faculties and centrally
   - Provide frameworks, tools and mechanisms to make it easy to work across organisational boundaries and share capability
4. Make informed choices about the development of our scholarly information and technologies.

    Ongoing research and reflection about scholarly information practices will be essential to inform the effective and efficient development of our scholarly information environment.

    This means that we will:
    » Strengthen our capability to monitor external trends, understand internal practices and apply this to our decision-making about policies, services, systems and infrastructure

5. Build our physical learning and teaching environments, including our libraries, to maximise flexibility.

    Technology will continue to change the way in which our scholars engage with, use, and create information in their learning, teaching and research. Decisions about buildings, whether new constructions or refurbishment, are for the long term.

    This means that we will:
    » Embed flexibility of design into our decisions about buildings and broader campus development
    » Continually reassess how best to maximise use of our campus spaces to create optimal learning environments, as boundaries continue to blur between the ways in which our scholars use different spaces

To deal with globalisation of education and its infrastructure we will:

6. Leverage the opportunities offered by being part of a global collaborative community.

    We will actively seek to participate in collaborative communities and partnerships that enable us to influence and leverage abilities beyond our means as an individual organisation. We will use open standards, open source and other open initiatives to ensure that we can effectively collaborate, ‘trade’ and re-use the work of whole communities. We will not invest in creating bespoke solutions that we could readily achieve in other ways or where they do not add unique and deep value to our mission.

    This means that we will:
    » Build partnerships and join collaborative organisations to achieve our outcomes
    » Partner in initiatives which seek to make scholarly content more open and freely accessible, challenging the current publishing monopolies
    » Prefer systems and infrastructure which meet open standards, which are open source rather than proprietary — consider exiting from Blackboard and existing proprietary library systems when open source products offer reliable, robust alternatives
    » Encourage our academics to place their created content in suitable, open, external repositories where they exist, rather than in our own
7. Focus on the quality of our staff and students as a key differentiator in a competitive world. The high quality of our staff and students is a unique asset which should be recognised, developed and capitalised upon to realise our collective aspirations.

This means that we will:
» Embed scholarly literacy in the curriculum and not offer stand-alone programs
» Continue to develop the information literacy of our academic and professional staff

8. Seek to shape national and international agendas, as befits our role as a leading institution.

We will advocate for change to public policy and other relevant agendas, where possible in cooperation with other organisations. This will enable us to more readily advance scholarly information and communication and to achieve our vision.

This means that we will:
» Use opportunities to advocate for our position, individually and collectively through membership of national and international appropriate bodies.

To deal with the tension between emerging client needs, existing values and competing demands within finite resources we will:

9. Value the diversity of our discipline and individual backgrounds whilst recognising the need to make choices about our common future informed by an understanding of value and cost.

We will look for ways to learn continually from the different views that disciplines and individuals have of our present situation and of future needs. We will use this to inform our choice of initiatives, looking for synergies where these are possible and supporting differences only where they add demonstrable value and richness to the University's overall mission, justifying the investment required.

This means that we will
» Have fewer libraries, better equipped to meet student expectations for longer opening hours, more seating and more computer access
» Have no additional open shelf space on campus — preferring digital collections to enhance access and moving low-use collections to closed access and offsite storage
» Favour shared or common core information infrastructure across the University, for example authentication and authorisation systems, research data storage
» Catalogue and digitise our special and cultural collections only where they add distinct value to the University's overall mission by supporting specific research, teaching or outreach agendas
10. Implement initiatives in ways that ensure we can be innovative, agile, adaptable and flexible.

Whenever possible we will adopt international standards and implement infrastructure in ways that support local innovation, experimentation and prototyping while maximising overall efficiency. We will invest in a cost-effective core, leveraging solutions developed within the University or elsewhere rather than investing in large-scale implementations.

This means that we will:

» Invest in standards-based core infrastructure at the whole-of-University level
» Facilitate sharing of local innovations within agreed standards (requires effective authorisation systems)

11. Plan and operate in ways that are financially, technologically and environmentally sustainable.

We will minimise the negative environmental impact of our activities and will seek to offset any negative effects that we cannot avoid. We will consider issues of data quality and longevity in choices for new technologies and services. We will not implement major capital initiatives without first identifying a funding stream to operate and maintain them as sustainable services.

This means that we will:

» Consider ‘thin client’ devices for libraries and student laboratories to minimise power and support costs
» Follow international guidelines for the development of sustainable digital repositories
» Only undertake projects when the operating and maintenance costs have been allocated to sustain them
CONCLUSION

Melbourne’s vision is to be one of the finest universities in the world. The vision is being realised through the Growing Esteem strategy, the 10-year plan to fulfil Melbourne’s aspirations to be a public-spirited and internationally engaged institution, highly regarded for making distinctive contributions to society in research, learning and teaching, and knowledge transfer.

The Information Futures Commission’s brief was to develop a 10-year strategy for the University’s scholarly information and technologies. The ability of our scholars to advance knowledge through creating, synthesising, contributing and accessing scholarly works will be integral to achieving this vision. This report describes some external drivers for change in this area, outlines the University’s current state of readiness for that change and frames the principles that have informed the development of Melbourne’s Scholarly Information Future: a ten year strategy.

This report results from months of consultation, deep engagement and discussion across the University community. It recognises that resources are not infinite, that in a time of rapid change the setting of priorities matters greatly, that we must make choices. Those choices should aim to position the University as a leader in the application of scholarly information and technologies to underpin next generation research, teaching, learning and knowledge transfer, binding the strands to achieve the Growing Esteem vision.

Clearly there are some fundamental building blocks which need to be in place before we can be competitive. At the same time, just doing what everyone else does is unlikely to differentiate Melbourne as a leader. We will need to set a path that allows us to address existing gaps within the context of an aspirational plan that is sensitive to the realities of our current resource environment.
APPENDIX A:
SUPPORTING DOCUMENTS

This report should be read in conjunction with:


The documents listed below provide background, context and evidence to support the report, strategy and plan.

**Key reference documents**

Background about the University’s strategic goals, current standing:

- *Growing Esteem: Choices for the University of Melbourne: discussion paper*, July 2005
- *Growing Esteem: strategy*, December 2005
- *Final report of the Research and Research Training Taskforce*, January 2007
- *Report for Council from the Knowledge Transfer Taskforce*, November 2006
- *University of Melbourne libraries: 10 year strategic plan*. Dr Kenn Fisher, February 2005
- *Cultural Strategic Plan 2007-2009*

**Consultation paper**

Designed to stimulate conversation and frame the work of the Information Futures Commission:


**Evidence gathered from consultation process**

Benchmarks, feedback and other data to support decision-making. These documents and videos are available from the Information Futures web site at www.informationfutures.unimelb.edu.au

- Seventy-six written submissions from faculties, departments and individual members of the University, and from external stakeholders, responding to the consultation paper. See also the 12 comments posted on the Information Futures weblog.

• *Report: results of the “Outstanding!” survey.* Version 0.2 (draft) dated 12 June 2008. Describes aspirations of 136 researchers, teachers, students and professional staff about the ideal scholarly information environment.

• Outputs from exploratory workshops, April 2008. Six sessions held with students and staff, identifying goals and planning principles related to the triple helix.

• Information Futures Forum series: video recordings of lectures by internal and external experts:
  » Library of the Future—panel discussion with Professor Pip Pattison, Professor Janet McCalman, Ms Gillian Luck and Dr Kenn Fisher
  » Learning and teaching in 10 years’ time — panel discussion with Dr Dianne Chambers, Dr Kerri-Lee Harris, Professor Richard James and Dr Gregor Kennedy
  » High performance computing and e-research infrastructure: Mr Rhys Francis, Executive Director of the Australian E-Research Infrastructure Council
  » Unlocking Access—the case for open-access publishing: Professor Michael Geist, University of Ottawa
  » The Tower And The Cloud: Mr Richard Katz, Vice-President, EDUCAUSE
  » Presentations by major vendors including Apple, Blackwell, Sun, Cisco. Video recordings.

• Student-Staff Consultation Forums: notes and video recordings of three open forums held in April, May and June.

• Additional project documentation (not available on web site): correspondence; internal notes of meetings with deans, committees, other stakeholders; outputs from weekly meetings of Expert Panel; workshops held with Expert Panel and Information Services staff; notes of June focus-group sessions.
APPENDIX B: ACKNOWLEDGEMENTS

Many people contributed to the work of the Commission. The project team thanks everyone who took the time to read the consultation paper and respond, attended the forums and participated in focus groups and workshops.

We offer particular thanks to the following individuals and groups, and our apologies to anyone we have inadvertently overlooked.

Steering Committee

Vice-Chancellor — Professor Glyn Davis (Chair of the Steering Committee)
Member of Council — Sally Beattie
Provost — Professor Peter McPhee
Chair, Research and Research Training Committee — Professor Ron Slocombe
Chair, Teaching and Learning Development Committee — Professor Richard James
Chair, Libraries Committee — Professor Janet McCalman
Vice-Principal (Property and Campus Services) — Chris White
Pro Vice-Chancellor (University Relations) — Professor Warren Bebbington
Dean of Architecture, Building and Planning — Professor Tom Kvan
Dean of Veterinary Science — Professor Ken Hinchcliff
Dean of Arts — Professor Mark Considine
Student representative — Scott Bloodworth, Secretary, Student Union
Vice-Principal and Chief Information Officer — Linda O’Brien (Commission leader)

External Reviewers

Mr Richard N Katz, Vice President of EDUCAUSE and the Founding Director of ECAR, the EDUCAUSE Center for Applied Research

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Jon Peacocke — Service Owner, Student IT Services
Jenny Ellis — Director, Scholarly Information, Information Services
Jock Murphy — Director, Collections, Information Services
Helen Hayes — Director, Knowledge Transfer

Authors of written responses to the Consultation Paper and Draft Strategy

Faculty of Economics and Commerce
Brooke Young, Professor Colin Ferguson, Professor Greg Whitwell, Penny Braybrook, Jacqueline Randall

Graduate School of Education

Graduate School of Engineering

School of Graduate Studies
Professor Dick Strugnell, Pro Vice-Chancellor (Graduate Research); Jennifer Warburton, Information Services

Law School
This report was written primarily by Associate Professor Carolyn Evans (Associate Dean Research) with the assistance of Ms Carole Hinchcliff, Law Library Manager, and Mr Peter Jones, Director, Legal Information Resources. It is based on a survey of members of faculty to which we received 50 replies; the more detailed comments of a working group made up of members of faculty and the library; a short focus group held with RHD students; and comments from the Law School Executive Committee.

Faculty of Medicine, Dentistry and Health Sciences
Professor Peter Harris – Associate Dean (Information) following consultation with members of academic, professional and clinical staff and student from the Faculty, affiliated research institutes and teaching hospitals.

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Faculty of Science
  Dr Martin Sevior (Physics), Tim Dyce (Physics), Associate Professor Janet Hergt (Earth Sciences), Dr Raoul Mulder (Zoology), Jon Pearce (Information Systems), Dr Andrew Robinson (Mathematics and Statistics), Dr Spencer Williams (Chemistry)

Faculty of the VCA
  Associate Professor Su Baker (Deputy Dean), Ms Georgina Binns (VCA Librarian), Dr Mark Elliot (researcher), Alex Gibson (researcher)

Faculty of Veterinary Science
  Associate Professor Peter Mansell, Rowena Morrison (Librarian, Werribee branch library)

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Library Committee, Faculty of Land and Food Resources
  Dr Stefan Arndt – Chair LFR Library Committee after consultation with staff and students of the LFR faculty. Additional comments by Kat Frame.
Library Users Committee, Faculty of Arts
chaired by Dr Christopher Marshall (Art History @ School of Culture and Communications) and with additional input regarding ICT issues provided by Professor Sean Cubitt (Media and Communications).

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National Centre of Excellence for Islamic Studies, Faculty of Arts
Professor Abdullah Saeed, Associate Professor Shahram Akbarzadeh.

Residential college libraries: joint submission by Sylvania Cheung, St Hilda’s Library; Laurel Clark, International House Library; Angela Gehrig and Geraldine Woodhatch, Allan
and Maria Myers Academic Centre, St Mary’s College and Newman College; Robin McComiskey, University College Library; Hazel Nsair, Trinity College Library; Therese Robin
and Bronwyn Wallace, Ormond College Library; Gale Watt, Queens College Library

School of Culture and Communications, Faculty of Arts
Associate Professor Angela Ndalianis, Dr Alison Inglis

School of Historical Studies
Professor Joy Damousi, Head, School of Historical Studies; Dr Catherine Kvesi, Chair
of School of Historical Studies Publications Committee; Dr Joanna Cruickshank, Senior
Research Associate, School of Historical Studies; Ms Amanda Barry, PhD Candidate,
School of Historical Studies

School of Languages and Linguistics
Dr Chris Andrews, on behalf of the School of Languages and Linguistics

Vaccine and Immunisation Research Group, School of Population Health
VPD Mathematical Modelling Program: Dr James McCaw, Dr Jodie McVernon, Professor
John Mathews, Professor Terry Nolan, Dr Paul Pallaghy

Vera Mackie, ARC Australian Professorial Fellow, on behalf of East Asian Collection Users’
Committee

Carmela Baranowska, PhD candidate
Paul Davis, eResearch Consultant, VERSI
Professor Howard Dick, Department of Management and Marketing
Professor John Furness, Department of Anatomy and Cell Biology
Associate Professor Roger Hadgraft, Director, Engineering Learning Unit; and Associate
Professor David Shallcross, Associate Dean (Teaching), Melbourne School of Engineering

Professor Dan Hunter, Chair in Law, Melbourne Law School
Professor Siaw-Teng Liaw
Aaron Mannion, postgraduate student and member of the Libraries Committee
Doug Parbery, member of the Subcommittee on Library and Information Access, Committee of
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Ronald Ridley, Personal Chair in the Department of History (retired)
Associate Professor Robyn Sloggett, Director of the Centre for Cultural Materials Conservation  
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Marcus Wigan, Professorial Fellow, Department of Civil and Environmental Engineering  
Ian Williams, PhD candidate, Centre for Adolescent Health  
Robin Wright, Research Fellow, Centre for Media and Communications Law, Melbourne Law School  
Stephen Young, University Copyright Officer  
Justin Zobel, Honorary Professorial Fellow and Principal Researcher, School of Computer Science and Software Engineering  

Paul Ayris, Director of UCL Library Services and UCL Copyright Officer, University College London  
Janette Wright, Chief Executive, CAVAL Ltd  
Jan Fullerton, Director General, National Library of Australia  
Bill Appelbe, Victorian Partnership for Advanced Computing (VPAC)  
Victorian eResearch Strategic Initiative (VeRSI)  

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Ruth Baxter  
James Beckford Saunders  
Georgina Binns  
Colin Blythe  
Peter Bode  
Naomi Burke  
Mary Coghan  
Ailsa Dott  
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Helen Thompson  
Debra Vickers  
Jennifer Warburton  
Trish Wilson  
Dr Lyle Winton  
Patrick Wong  
Andrew Yeoh  
Eve Young
Workshop participants

Joseph Barrins
Sally Beattie
Annie Bolitho
Gaby Bright
Naomi Burke
Georgie Chudek
Ailsa Dott
Jenny Ellis
Professor John Furness
Sarah Griggs
Barbara Hammond
Professor Peter Harris
Serenity Hill

Dr Simon Kerr
Kirsten Larsen
Associate Professor Michelle Livett
Loura Molina
Associate Professor John Murphy
Helen Page
Phanchung
Di Rachinger
Garry Thomson
Paolo Tombesi
Gavin Walsh
Stephen Young

Focus group participants

Sue Brazenor
Dr Angela Bridgland
Dr Carolyn Evans
Carol Hinchcliff
Professor Peter Harris
Tammi Jonas
Dr Pat Mclean
Gavan McCarthy
Associate Professor Peter Mansell
Michael Piggott
Professor Field Rickards
Professor Frances Separovic
Professor Liz Sonenberg
Professor Leon Sterling
Michael Tracey
Associate Professor Ray Wyatt


**Presenters at Information Futures Forums**

Stephen Atherton, National Development Executive, Higher Education, Apple  
Oren Beit-Arie, Chief Strategy Officer, Ex Libris  
Crispin Blackall, Director, Future Technology Solutions, Telstra  
Carolyne Cohn, Area Sales Manager Blackwell Ltd  
Dr Kenn Fisher, Director, Learning Futures, Rubida Research Pty Ltd  
Rhys Francis, Executive Director of the Australian E-Research Infrastructure Council  
Professor Michael Geist, University of Ottawa  
Richard Katz, Vice-President, EDUCAUSE  
Tony Macguire, Regional Manager, Blackboard  
Simon Phipps, Chief Open Source Officer, Sun Microsystems  
Michelle Selinger, Director, Education (Asia Pacific), Cisco  
Richard Siegersma, Executive Chairman, DA Books  
Dr Dianne Chambers, Melbourne Graduate School of Education  
Professor Richard James, Centre for the Study of Higher Education  
Dr Kerri-Lee Harris, Centre for the Study of Higher Education  
Dr Gregor Kennedy, Faculty of Medicine, Dentistry and Health Sciences  
Gillian Luck, Vice-Principal and Academic Registrar  
Professor Janet McCalman, Chair Libraries Committee  
Professor Pip Pattison, President of Academic Board

**Guest presenters at student-staff consultation forums**

Professor Mark Considine, Dean of Arts  
Sally Beattie, student member of University Council  
Professor Peter McPhee, Provost  
Scott Bloodworth, Student Union  
Professor Iven Mareels, Dean of Engineering

**Event support**

Information Services: Russell Evans, Ben Loveridge, Gillian McTigue, Kylie Nickels, Ian Shiel, Janice Tomlinson  
Timetabling and Venue Management: Martin Andersson  
Marketing and Communications: Paris Paliouras
Publication design and production
John Bedovian and Winnie Tan, Marketing and Communications

Other contributors and participants
Council of Australian University Directors of Information Technology (CAUDIT)
Gartner
Anne Marie Schwirtlich, CEO, State Library of Victoria

Dr Larry Abel
Professor William
Robert Adam
Dr Eleanor Ager
Professor Murray Aitkin
Roxanne Allen
Joe Arthur
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Dr Amanda Barnard
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Nola Birch
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Terry Brennan
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Deanne Catmull
Elsa Chan
Faye Yik-Wei Chan
Chan Keng Yik
Chua Seng Chai
Julie Clarke
Claudine Clionh
Malcolm Cocking
Dr Sue Cole
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Graeme Connelly
Alistair Cook
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Kym Williams  
Kaye Winstone  
Dr Ken Winkel  
Angela Wong  
Shirley Wong  
Dr Angela Woods  
Robin Wright  
Yeo Joey  
Bick-har Yeung

Project team
Mark Brodsky  
Margaret L Ruwoldt  
Sally Newton  
Lynda Gilbert