SHARING OUR KNOWLEDGE AND MANAGING OUR INFORMATION: DEVELOPING THE UNIVERSITY'S INFORMATION STRATEGY

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ABSTRACT

Universities are knowledge-based organisations involved in the creation, synthesis and dissemination of knowledge. Yet it is only recently that universities have realized the importance of knowledge management from an organisational perspective.

In 2004, The University of Melbourne's new Vice-Principal (Information), Linda O'Brien, articulated the need for an organisation-wide information strategy for the University, to provide the framework from which to set planning priorities. The focus of the information strategy was the core business of the university, including management of the University's scholarly and corporate information.

Organisational 're-alignment" within the Information Division resulted in appointment of a new Information Management Program, to take carriage of the proposed Information Management Plan. Strategic collaboration was central to the development of the Plan, and involved key stakeholders from across the organisation working with the Information Division (comprising libraries, information technology services and teaching and learning support) to develop a shared view.

This paper discusses the factors influencing change, the organisational re-alignment process, the steps taken to engage senior management and stakeholders from the start in collaboratively developing this strategy within the policy framework of the University, with reference to the culture, people, process and technology at the University of Melbourne that were essential elements in the development and adoption of this strategy.

1   INTRODUCTION

At a time of major changes in higher education it could be expected that universities would be early adopters of the growing management disciplines of knowledge and information management, yet universities have been slow to recognise the importance of these approaches.

The University of Melbourne (the University), established in 1853, is Australia's second oldest University and second largest research organisation. The University has a strong strategic vision embodied in 'The Melbourne Agenda', "of a world-class university" (The University of Melbourne, 2004a, p3). This clear vision had driven revenue growth over the seven years to 2004, underpinned by strong growth in enrolments from international students, and latterly from local full-fee paying or increased HECS fee students. Full fee-paying students, almost 35% of students at the University (The University of Melbourne, 2004b, p3), expect access to "world-class" information and technology resources. Additionally, major growth had created issues of size, complexity and distance within the organisation.

The University had only recently realized the importance of strategic information and knowledge management from an organisational perspective and in meeting student and staff needs.

In this the University was not alone. Dr. Andrew Treloar's study of information management strategies in universities in the UK and the US, found that although Coventry University had "by far the best planned and presented Information Strategy", Glamorgan University was the only university in which

the information strategy "appeared to have an approach that made a significant difference to the operations of the university" (2003, S. 1.3).

In 2004, The University of Melbourne's new Vice-Principal (Information), Linda O'Brien, arrived with strong mandate from University senior management for leadership in the information space, and change. Linda articulated the need for an organisation-wide information strategy for the University, to provide the framework from which to set planning priorities. The focus of the information strategy was to be the core business of the university, including management of the University's scholarly and corporate information.

Essential elements in developing the strategy were organisational 're-alignment" within the Information Division (comprising libraries, information technology services and teaching and learning support) resulting in a new Information Management Program to take carriage of the plans underpinning the strategy; involvement of senior management and key stakeholders from across the organisation working with the Information Division to develop a shared view; and attention to collaboratively developing this strategy within the policy framework of the University.

2   DISCUSSION

2.1   FACTORS INFLUENCING CHANGE
2.1.1   THE EXTERNAL ENVIRONMENT
In his message introducing the Australian Higher Education Review package of reforms (Nelson reforms), Education Minister Brendan Nelson stated that "Globalisation, massification of higher education, a revolution in communications and the need for lifelong learning leave Australian universities nowhere to hide from the winds of change" (Nelson, 2003). With the imminent implementation of the Nelson reforms in 2005, incoming University of Melbourne Vice-Chancellor Glyn Davis' view is similar. He states, "We are on the threshold of radical change…. [with] at least three pressures …undermining the Dawkins model. All challenge the viability of Australian regulation for universities. These pressures are:
  –   privatisation from within;
  –   the growth of private providers; and
  –   international trade" (Davis, 2004, p. 3).

The University's Strategic Plan states that "universities everywhere will be caught up in the fundamental transformation of human communications, institutions, economic systems and organisational structures associated with the emergence of a knowledge-based global economy", and that "campus-based universities will survive and thrive in the new environment… by embracing the 'digital revolution', and mainstreaming the 'virtual' to enhance the campus experience" (University of Melbourne, 2004a, p. 9).

Therefore the expectations relating to the effective use of information and adoption of information and communication technologies are high. These strategies are seen to be a determinant of the success of a university in an increasingly competitive global market.

2.1.2   INTERNAL DRIVERS
Paralleling the changes in the external environment were those at the University.

By 2004 the University was a complex "city within a city" of 60,000, including nearly 40,000 individual students located on the main campus at Parkville in Melbourne, and in over 30 other University locations. As previously mentioned, rapid growth and major change had created organisational and technological complexity, and high student expectations.

The University had sought to address these changing needs in variety of ways, including use of online course materials for teaching (via Webraft, an in-house learning management system), as the table below shows.

Changes	2000	2004
Webraft subjects	420	2,118
Webraft students	11,500	30,765
Corporate servers	30	70
Communication links to other campuses	20	38
Wireless networking	None	In 46 University buildings
IT security incidents	Rare	Weekly

Table 1: Scene setting: how we have changed 2000 to 2004 (O'Brien, 2004b p. 4)

Additionally, the University had embarked on a range of major information and communications technology infrastructure projects, driven from within and outside of the Information Division (ID). These included:

- The University Systems Project (USP), a major business process change program to deliver integrated finance, human resources, student and research modules;
- A new Content Management System (CMS) for the web;
- A new Learning Management System (LMS) to replace the in-house LMS Webraft;
- A new Research Management System;
- Turnitin, a new Plagiarism Detection Tool;
- A range of applications and systems associated with upgrading the library catalogue, managing copyright compliance, digital assets, e-reserve and licenses and providing seamless online searchable access to all electronic resources.

It had become crucial to have an information strategy as an integral part of the University's and Information Division's planning processes - to manage size, complexity, growth in numbers and expectations, and major technology infrastructure projects effectively. The appointment of a new Vice-Principal (Information) in early 2004 was an opportunity to provide leadership in addressing these critical issues.

2.2   NEW VICE-PRINCIPAL (INFORMATION) AND ORGANISATIONAL CHANGE

Linda O'Brien's role as Vice-Principal (Information), oversighting the Information Division (ID), incorporated that of University Librarian and Chief Information Officer (CIO) and was expected to:

- Drive strategic thinking in information technology
- Provide leadership to the University in the development of information strategies in support of teaching, learning and research
- [Be a] primary source of policy advice on;
    o Knowledge management strategies for the university;
    o Strategic directions for the provision of information technology and library services;
    o Provision of high powered computing for academic purposes;
    o Support for administrative /information systems;
    o Best practice in learning management systems;
    o Provision of IT, telephones, AV and e-mail infrastructure to the whole University and;
    o Management of the University's web sites. (O'Brien, 2004c).

Highlighting the need for change were a number of internal and external reviews of the Information Division pointing out opportunities for improvement, including provision of a more streamlined IT systems, service and delivery model, and clarity of strategy and direction in information and communications technology planning (Gartner Consulting, 2003), (Ramsay, 2003), (The University of Melbourne, 2003).

In response, the new Vice-Principal (Information)'s program of change incorporated two main strategies:

- The ID Futures Process of wide-reaching organisational "re-alignment", to position the Information Division appropriately to respond to feedback and provide leadership;
- A recommendation to senior management for development of an overarching Information Strategy for the University, underpinned by a raft of recommendations totaling $24 million over 3 years for Information and Communications Technology projects (O'Brien, 2004a).

2.2.1   THE INFORMATION DIVISION (ID) "FUTURES PROCESS"

The process of re-aligning the Information Division around the needs of the organisation took place throughout 2004, gathering momentum in July 2004 with a two-day ID Futures workshop, and the first iteration of a detailed "change proposal".

The elements underpinning the change were a clear statement of why change was needed, a message delivered by the Vice-Principal (Information) via many presentations, meetings and personal communications; secondly senior management and broad stakeholder buy-in to and approval of the proposed change, canvassed in a range of meetings and presentations; and thirdly a transparent and open change process in which the stages and steps were clearly defined and followed, and in which all staff could participate.

Other methods used to engage people in the change process included personal "Linda e-mails" sent to all members of staff encouraging feedback, workshops involving a cross-section of ID staff and others, including clients, working groups, and a website for knowledge sharing. The stages of the process are outlined on the ID Futures timeline web page (Appendix 1).

A final draft of the ID Futures Change Proposal (O'Brien, 2004d), incorporating all feedback, was available by the 29th September. Included were:
- A summary of opportunities and challenges;
- Vision, Mission, Values and Behaviours;
- Management and Decision-making Principles and Structure;
- Process for populating the new structure including Stages and Steps.

Also included were descriptions and an outline of the proposed new organisation structure for the Information Division (Appendix 2), which made provision for a new program to be titled Information Management.

Further consultation was held on this final change proposal. Feedback was positive, the Vice-Chancellor's Executive team endorsed the Division's broader CIO role, and the Senior Vice-Principal with Faculty General Managers stated the their full support for the program. The Vice-Chancellor signed off on the proposed new structure in October 2004.

In November 2004 the two new Deputy and five Program Director roles were advertised internally, following the *Stages and Steps* principles outlined in the Change Proposal (O'Brien, 2004d p. 10). Five out of the seven new positions were filled via a competitive process, including that of Director, Information Management. At the time of writing (December 2004) two Program Director positions were yet to be filled.

With the formation of this new program the scene was set organisationally for the Information Division to take up a leadership role and take carriage of developing the University's Information Plan and strategic direction.

2.2.2   THE INFORMATION MANAGEMENT PROGRAM

The Information Management Program, with approximately eighty staff and a budget of $16.5 million (including $11.5 million for scholarly resources) was charged with providing:

"University-wide leadership in the development of the University's information architecture[1], both scholarly and corporate, and [was to] be accountable for the management of enterprise information and for leadership in the management of the University's cultural collections". (O'Brien, 2004d p. 10).

[1] The information architecture must inform and be informed by the underlying information systems and information technology infrastructure architectures.

Functionally the new Information Management program had structural similarities to the existing Information Resources Access (IRA) group in that it included "back-end" cataloguing and metadata, access (interlibrary loan, document delivery and digitisation) sections, archives, the web centre, electronic resources, digital repositories and various supporting applications and systems.

However the challenge of providing leadership in the development of the University's information architecture "university-wide", and the inclusion of corporate in addition to scholarly information were concepts new to many of those within the program.

These concepts were not new to the University. Leadership in information and knowledge strategies was a key part of the role description for the new Vice-Principal, and from the beginning she had involved stakeholders in a variety of ways to develop understanding and gain buy-in for an Information Strategy, as discussed below.

However it was now necessary to involve the Information Division staff at a range of levels. In December 2004 one-day "Futures" workshops were held for three of the five new programs, including Information Management.

The Information Management workshop involved a cross-section of thirty of the eighty staff from across the program, the new Directors and Deputies, and staff from other programs, all working through issues relating to the concept and functions of the new program, the opportunities and challenges in delivering core business, and looking at possibilities for organisational structure.

The big picture and external focus was supplied by the change proposal (O'Brien, 2004d), an address from the Vice-Principal (Information), and feedback from internal and external clients.

Client feedback focused on corporate information. A key issue for these clients was the frustrating duplication at the University regarding ownership, collection and integrity of information. With no clear custodian for information different organisational areas within the University collect the same information, usually from the same people, often on the same day. Information sharing was an issue, for example staff location details collected for one project are unavailable to another. Responsibilities were not clear regarding collection of information.

The Information Management workshop group struggled to agree on definitions of information management and information architecture, debated the concept of corporate information, whether this was our 'core business", and whether this would adversely impact the critical importance of scholarly information, an area in which the ID had both experience and expertise.

What became clear to participants once they had heard from the Vice-Principal (Information), and clients, was that an information gap existed, and that Linda's mandate as CIO was to provide leadership to the University in the development of information and knowledge management strategies to support teaching, learning and research and guide policy development.

It was also clear that the role of the Information Management program was to support Linda in this leadership role, and that an Information Planning Unit could work in partnership with the University to agree on a "map" of our information architecture, and to develop agreed information principles, standards, and advisory services.

2.3 INFORMATION STRATEGY

At the University, the decision was made very early to focus on development of an information management strategy, rather than one titled knowledge management. In practical terms, the immediate challenges facing the University were to provide a 'whole-of-institution' view of the overarching information management and information and communication technology (ICT) infrastructure issues and projects. In definitional terms, *data, information* and *knowledge* can be seen as a hierarchy beginning with data, which "in combination may form the basis of information", followed by information, "data in a context to which meaning has been attributed", and finally knowledge, "a body of understanding and skills that is constructed by people" (Standards Australia, 2003 p. 1).

Information management was seen a critical gap for the University, and therefore as an essential building block, or first step to address, before tackling knowledge management.

Monash University had made a similar decision.
"The Steering Committee for the Information Management Strategic Framework Development Project at Monash had determined that "knowledge … is internal to an individual. It is only when it is made available to someone else (encoded in audio, text or video) that it becomes information" and that "the focus should initially be on managing the encoded information before moving on to the less tangible challenges of producing a knowledge sharing (rather than knowledge managing) corporate environment" (Treloar, 2003, s1.3).

The challenge in developing an Information Strategy for a large complex organisation such as a University is for that strategy to be a living document, widely shared, that makes "a significant difference to the operations of the university" (Treloar, 2003, Executive Summary).

At the University, discussion on development of an Information strategy began early.

A paper titled *"Towards an Information Strategy: Stage One"* (O'Brien, 2004a), detailing plans for development of an Information Strategy for the University, and including a set of recommendations for Information and Communications Technology projects, was presented at the University's June 2004 "Lindenderry" Senior Executive Planning and Budget Committee (PBC) conference. The paper, subsequently endorsed by PBC, allocated $8m a year over the period 2005-2007 for upgrade of the University's Information Technology infrastructures and priority IT projects.

The paper also proposed a new planning framework for information management at the University. Central to the Information Strategy was:

- "A three-year rolling Information Management Plan which sits alongside the [University's] Teaching and Learning Management Plan and the Research and Research Training Management Plan"; with

- "An [underpinning] three-year Information and Communication Technology Management Plan (ICTMP) [covering] information systems, integrating technologies and the underlying infrastructure (O'Brien, 2004a, p. 4).

- The ICTMP, which had major project and budgetary implications, was presented and endorsed at the June 2004 "Lindenderry" conference.

Work on the overarching strategy began with a June 2004 meeting of key stakeholders from across the University, followed by a workshop and other forums in September and October 2004. A core Information Division working team, and a more broadly representative Information Strategy Reference Group were then formed, tasked with developing and approving a draft Information Strategy. By December 2004, reported achievements included development of the underpinning policy and principles, with agreed IT Principles, and draft Information Principles ready for consideration by the Information Strategy Committee in early 2005 (O'Brien, 2004f). The report also gave a clear outline of the next steps for the University's "Information Management Plan 2006-2008", stating that 2005 would see "completion of the ten year Library Learning space plan, information audits of selected areas in 2005 and the development of the University's high level information architecture" (O'Brien, 2004f, p. 2).

2.3.1   DEVELOPING THE STRATEGY AND GAINING SUPPORT
In developing a widely shared and understood Information Strategy, it was essential to work within the particular organisational structure and culture at Melbourne. University governance and decision-making is heavily reliant on committees, formed as representative groups from across the University, with different terms of reference and varying levels of experience and understanding. Decision-making is devolved, in line with the devolved organisational structure of the University. Major decisions or strategic commitments require discussion with all interested stakeholders and adoption at key planning events in the University cycle, such as the "Lindenderry" Planning and Budget meeting in June each year.

The other elements underpinning buy-in to development of an Information Strategy change were similar to those used in the ID Futures Process, namely:

- a clear statement of why change was needed as evidenced in *"Towards an Information Strategy: Stage One"* (O'Brien, 2004a);
- senior management and broad stakeholder buy-in to and approval of the proposed change, as evidenced in the several forums and workshops and formation of the representative Information Strategy Reference Group;
- a transparent and open change process in which the stages and steps were clearly defined and followed, and in which the University and all staff could participate.

As in the Futures Process, methods of engagement included papers, presentations at forums, personal "Linda e-mails" sent to all staff, workshops and working groups, and a website for knowledge sharing.

Additionally, a key organisational enabling structure was the formation of a new Information Management Program with clearly defined roles and responsibilities, to take carriage of the strategy.

3   CONCLUSIONS

During 2004, the University of Melbourne had recognised the importance of an information strategy integral to the University's planning processes, and had made a commitment to the development of such a strategy.   Several key elements had been developed and endorsed by the University, and a clear roadmap of the way forward had been widely shared at all levels.

This degree of progress in nine months was due to strong sponsorship from above; careful attention to the policy framework of the University, especially governance and decision making structures; ongoing engagement of a broad range of stakeholders, staff and clients in the stages and steps of the process; clear statements of roles and responsibilities as embodied in a new organisational structure; and leading by example, in that knowledge sharing and information organisation was part and parcel of the process.

All the elements are in place for an information strategy that is not only widely shared and understood, but is embedded in the operations of the University via plans, standards and principles, thus clearly assisting us to survive and thrive in the new environment of global competition and change in higher education.

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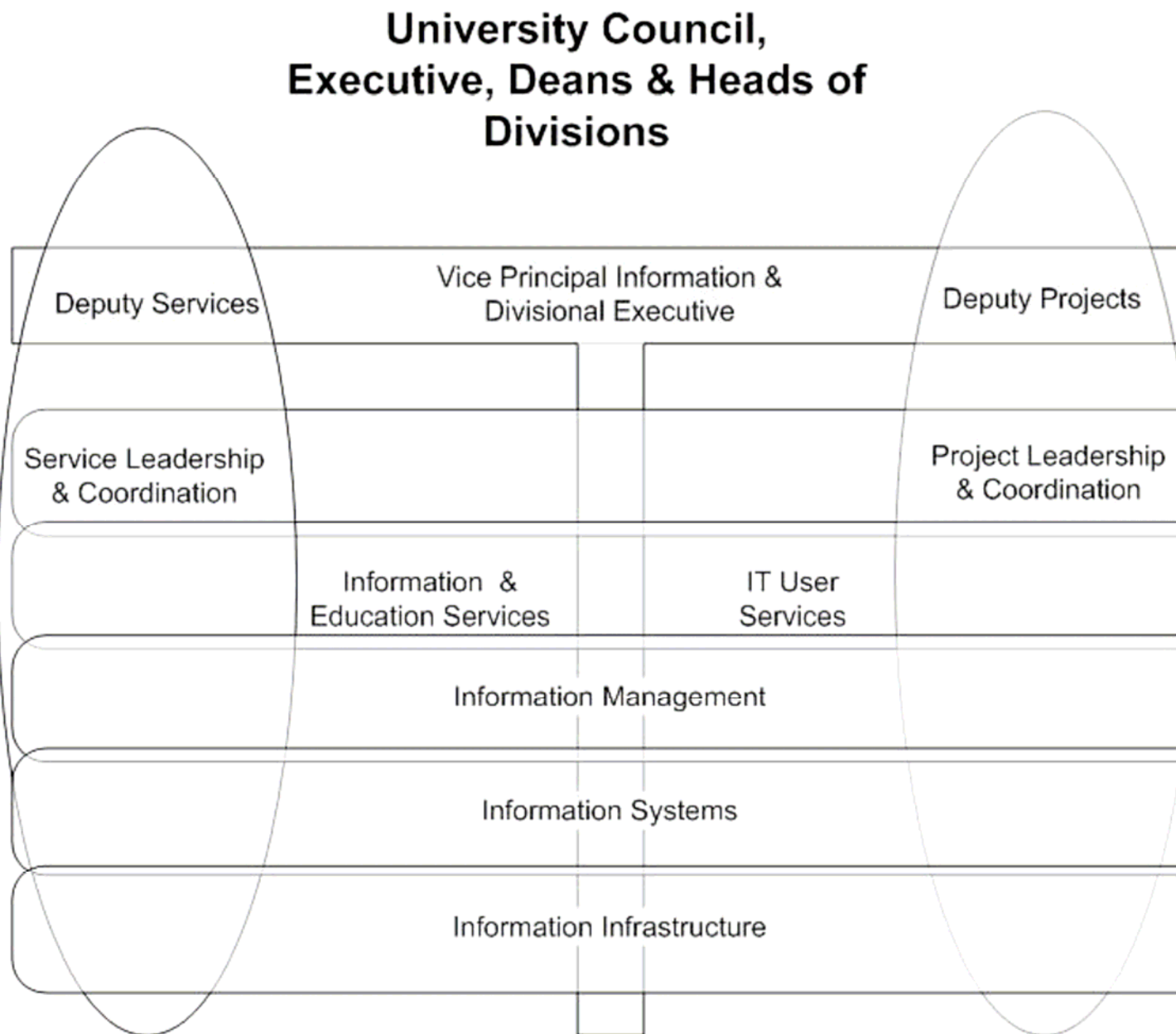
5   APPENDIX 1: ID FUTURES MILESTONES

"An overview of the progress and milestones we achieve as we build on our strengths and move forward".   Retrieved December 12, 2004 from The University of Melbourne, Information Division Futures Web site: http://www.infodiv.unimelb.edu.au/idfutures/about/milestones.html

Day 92: 1st December - Reflection e-mail from Linda
Day 92: 1st December - 5 members of the new executive team commence work
Day 82: 17 November - Almost Christmas e-mail from Linda
Day 79: 12 November - Next stage e-mail from Linda
Day 74: 05 November - The Executive - part 2 e-mail from Linda
Day 70: 01 November - A(nother) time of transition e-mail from Linda
Day 67: 27th October - Papers to Share created on the ID Futures web site.
Day 56: 12 October - The Executive - part 1 e-mail from Linda
Day 49: 1st October - Balance e-mail from Linda.
Day 47: 29th September - Final draft of the ID Futures Change Proposal added. Summary of staff feedback on the Change Proposal added.
Day 39: 17th September - Change Proposal Forum held.
Day 38: 16th September - Change Proposal Forum held.
Day 33: 9th September - ID Middle Managers Forum.
Day 31: 07 September - ID Futures Proposal e-mail from Linda. ID Futures Change Proposal now available for staff feedback. Change Proposal Forums now open for registration.
Day 29: 03 September - Futures update e-mail from Linda
Day 21: 24 August - Next steps on the journey e-mail from Linda
Day 20: 23 August - ID Futures Workshop number 2. Linda's powerpoint presentation, workshop activities
Day 18: 19 August - values and behaviours workshop held
Day 17: 18 August - discussion paper from challenges working group published; audio recording from 12 August staff forum available; values and behaviours workshop held
Day 16: 17 August - values and behaviours workshop held
Day 15: 16 August - discussion forums launched; draft mission, values and behaviours published for staff review and feedback; It takes all types... e-mail from Linda
Day 13: 12 August - ID staff forum
Day 10: 9 August - ID staff forum
Day 7: 4 August - website launched
Day 4: 30 July - presentation to ID Middle Managers
Day 3: 29 July - Exciting Futures e-mail from Linda
Day 2: 28 July - second day of ID Futures Workshop
Day 1: 27 July - first day of ID Futures Workshop

6 APPENDIX 2: INFORMATION DIVISION STRUCTURE (DEC 2004)

University Council, Executive, Deans & Heads of Divisions

University Community

Deputy Services

Vice Principal Information & Divisional Executive

Deputy Projects

Service Leadership & Coordination

Project Leadership & Coordination

Information & Education Services

IT User Services

Information Management

Information Systems

Information Infrastructure

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