A PLAN FOR ADOPTING AN E-UNIVERSITY STRATEGY FOR THE UNIVERSITY OF CYPRUS

A Project
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It is not the strongest of the species that survives,
or the most intelligent, but the one most responsive to change.
Charles Darwin

Executive Summary

The objective of this project is to develop a strategy and an action plan for adopting an e-university strategy for the University of Cyprus.

The e-university project at the University of Cyprus is concerned with the adoption of the necessary business strategy in implementing a total end-to-end information management system for the University by leveraging information and communication technologies. While there is a very challenging technological part in implementing this strategy, this project deals more with the business processes and business culture aspects of such an undertaking. The adoption of the right culture and business attitude has proven, over the years for many institutions, to be of far more importance than the adoption of any technological innovation. This project examines the business processes, culture changes, process reengineering and change management strategies needed for the University of Cyprus and examines and addresses the current situation and future goals of the University on these strategies.

The University of Cyprus has officially initiated its e-University project with various preliminary steps. This report is based in part on these preliminary steps such as the survey and interviews conducted among the University community. These have shown the existing problems and the community's desire for implementation of a new strategy that will help resolve them.

The benefits to the University from the proposed organizational changes are increased efficiency, higher performance levels, ease of access to information, one-stop self-service customer centric community and a community geared towards achievement, excellence and well-being. The proposed sweeping changes, though, require a great deal of conscientious effort and usually bring an upheaval in the organization. A substantial risk of failure exists if changes are not managed properly. The adoption of the strategic changes in a systematic, persistent and long-term-view manner is shown to produce the required benefits, which far outweigh the risks taken.

A proposed plan for the new e-University strategy has been developed, shown in the relevant section, with practical and concrete actions to help as a guide and reference. It builds on proposals suggested by others and shows the project areas that either have not been considered yet or have not been considered in desirable detail. The specific actions proposed will hopefully help to reduce the risks involved in such a large, all-inclusive project and pave the way to a successful outcome.

The methodology used in arriving to the proposed plan was based on:

i. Collaborating with the community using formal and open ended surveys, discussions and information gathering sessions. A large part of the University community was involved in the formal closed-end multiple choice questions survey. A smaller group of individuals, in important positions, was interviewed in open-ended style discussions.

ii. Strong emphasis has been placed in researching the literature on the subject

iii. How other educational institutions have formed their e-university strategies and what plans they developed in implementing this strategy.

The proposed plan that has been developed is based on six basic areas of action:

- Vision and strategy
- Management culture change
- Organizational culture change
- Information technology management
- Process reengineering and managing changes
- Technical recommendations

Within each of the areas above a specific action plan has been developed with a set of concrete and practical steps in addressing the issues involved.

All e-university projects have long-term objectives and there is a substantial risk involved of loosing site of these objectives along the way. A persistent and methodical effort is required during the implementation phase. The proposed action plan with its action points tries to minimize the implementation risks involved.

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Chapter 1: Introduction

The objective of this project is to develop a strategy and an action plan for adopting an e-university strategy for the University of Cyprus.

It is very often the case, in our age, that any attempt to modernize a business is characterized as an e-*Something.* There are many examples of these e-initiatives like e-Commerce, e-Business, e-Strategy, e-Learning and so on. The “e” loosely refers to the electronic age, a sort of catch phrase meant to include the notion that the proposed systems emphasize an increased reliance on technology for the processes involved in carrying about daily business.

It is, also, very often the case that we forget that the pervasive use of information and communication technology, which started with the beginning of the 21st century, was not the norm even before the 1990s. Primarily due to the huge and rapid advances in technology and the better understanding we have gained of its uses in the business organization, new strategies have been devised to take advantage of information technology. Business organizations found themselves, almost overnight, in an environment of global visibility, rapid technological change and global competition to which they were trying to adapt. They sought to find better and more refined solutions to the old problems of competitive advantage, economies of scale and efficiency. The use of information and communications technology was just the new dimension in this old game.

Using the same business principles and driving forces, universities could not be left behind in the quest for better efficiency and positioning in the competition arena. Higher education institutions are adopting a new set of strategies primarily based on electronic mediums in reorganizing their internal and external processes. They, often, call these new initiatives e-University projects or even more pompously e-University realignment projects.

1.1 Why do we need an e-University strategy? What are its objectives?

What are the objectives of these new strategies for higher education? What are the forces that push contemporary higher education organizations in the direction of revising their strategies? Do they have to adopt these strategies? What will happen if they do not? Are these forces relevant to the University of Cyprus? Does the University need to follow other institutions in adopting a similar strategy? Is the University in any danger if it does not follow these strategies?

The forces that push higher education institutions in adopting the e-University strategies are similar in nature to the forces faced by other private organizations that have adopted e-Commerce strategies. It should be emphasized though that the higher educational organization has its own unique dimensions. The freedom enjoyed by the academic department and the diversity of objectives within the organization, because of this freedom, are the two main and very important differences. A higher educational organization cannot be simply analyzed with the same principles and attributes of a private business.

These dimensions exist and are directly relevant to the University of Cyprus. The University is a higher institution with similar, if not exact, organizational structures as other universities. Therefore the forces acting on the University are similar in nature as in the case of other higher educational institutions.

In general, the forces acting on educational organizations for change can be summarized as:

- increasing pressures to contain and reduce administrative costs brought on by governmental budgets
- increasing pressures to become more efficient both in the financial but also in the product delivery process to keep up with the general business pace
- increased decision making complexity for the executives of the organization due to an expanding population of constituents (students, staff, alumni, society) that prevents timely and informed decision and jeopardizes the ability to provide excellent services
- increased pressures from society to achieve more on the diminishing budget
- decentralization of the organization (academic organizational behavior) that further worsens the decision making process and prevents executives from having a holistic “total organizational” view
- increased competition from both local and international organizations

- technological advances that create a de facto pressure for change within the constituents, primarily students, demanding change to more contemporary methods of service delivery.

The general objectives of the new set of e-University strategies can be summarized as:

- establishing strategic and competitive advantage against an ever increasing number of institutions both local, remote and overseas entering the educational market directly or indirectly
- creating a new business culture, one of inclusion and collaboration, teamwork, knowledge sharing, life long learning and life long offer with the aim of creating a better organizational environment
- transforming the key business relationships and processes emphasizing the customer based, not process based, relationships
- focusing the organization on timely and excellent service provision
- raising staff work environment satisfaction levels by creating a culture of inclusion in teamwork and community building where to think, research, create, collaborate and enjoy when at work
- extending the abilities and the reach of the organization in providing new teaching approaches and student interaction methods (remote learning abilities, e-learning, life-long learning)

It is important to note that adoption of this new set of strategies creates a more efficient organization, more adaptive to the rapid technological and environmental changes that are happening within and around the

organization. There is an increased adaptability in embracing new, more efficient, methods in reaching customers that result to higher levels of customer satisfaction.

1.2 What is an e-University?

Many higher education institutions have, as early as the late 1980's, embarked on large projects that have come to be known as the "e-University initiatives" or, better, "e-Strategy initiatives". E-University initiatives should not be confused with e-Learning initiatives (sometimes also called e-university or remote learning) which are geared towards "distance education" which is instruction facilitated by the technology infrastructure. Many institutions, now, integrate e-Learning initiatives in their e-University strategies allowing and planning for technology assisted instruction, class management, course material generation and remote teacher-student interaction.

While e-University projects involve a large technical part which includes many sub-projects in adopting, commissioning, installing and configuring technological solutions, an e-University project is not a technical solutions initiative. It is not only a purchase and deployment of a new technology solution. *An e-University project is primarily a strategy adoption, culture change and process reengineering initiative.* Its objective is to "facilitate and encourage collaboration, knowledge sharing, learning and teamwork thus promoting academic excellence"[1] and to create a new business environment and culture in which business excellence will prevail. While such a strategy adoption does not necessarily mean that information technology is involved or necessary, advances in technology, dictate the use of information technology

systems and processes in the adoption of an e-strategy. In this context, technology, primarily referring to information and communications technology (ICT or simply IT), is seen as both an enabler for the adoption of such strategic initiatives and also as a strategic building block in the business functions. The importance of IT in the e-university strategies cannot be overemphasized. It is a fundamental building block of this new strategy.

The most visible part of an e-University strategy is the institutional web Portal, many times called e-University Portal, e-Portal or even uPortal. An e-University Portal is a system of intranet web-based pages and software that creates an integrated environment that provides personalized access to all major systems and services of the institution from any location within or outside the organization. The accessible systems include financial records, human resources and payroll, purchasing, scheduling, reference and information, training, planning and calendars, student management, library, distance education and others determined by local demand. Even large and complex systems like Enterprise Resource Management (ERP) and Customer Relation Management (CRM) systems can be incorporated in the Portal. The Portal plays a central and pivotal role in the adoption of the new strategy. It is meant to be the front store of the whole new system that provides direct user information interactions with the various systems. It provides a coherent, easy to use, almost intuitive, visual system with which the user interacts. Examples of university web portals for four universities appear in figures 7, 9, 10 and 11 on pages 58, 60, 62 and 63 respectively.

It is a very common mistake to confuse the importance of the Portal with that of the adoption of the new e-strategy. It is even more common to confuse the technological solutions (the provision of network services, the software and the hardware that will be installed) with the strategy adoption to such an extent that e-Strategy initiatives often degenerate to enterprise wide technical initiatives. The Portal and its underlying technological infrastructure are very important tools for implementation of the strategy but they are not the strategy. The Portal is the front view of the underlying principles and adopted strategies and provides the best possible, easiest, and most efficient in time environment for users to interact with a myriad of back end systems in carrying out the daily business of the organization.

1.3 What is the Vision behind the e-University?

What is, then, the strategy that IT technology with its tools promises to deliver? R. Katz and R. West in their landmark “Sustaining Excellence in the 21st Century” paper in 1992 described the higher educational institution as follows: “Higher education institutions are highly complex organizations. Due to the diversity of institutional goals, the difficulty of achieving goal convergence, and the difficulty of measuring the impact of decisions, standard theories that apply to many private organizations are not adequate in describing organizational behavior in higher education.”[2] J. Voloudakis very recently found that “Information Technology has become a pervasive part of doing business in nearly all organizations during the last decade.”[3] In addition, T. Evgeniou in exploring new organizational structures, in an information intensive environment, found that “Organizations are stuck between [these] two worlds. They either suffer from lack of visibility across the enterprise or

force common practices in order to increase visibility but then quickly find themselves suffering from rigidity or information invisibility when things change."[4] Numerous other researchers have come to the same conclusions.

Three important themes emerge from the studies and research on organizational structures (especially for higher education) and the integration of information technology that are crucially important for the successful administration of the organization.

- The university is a unique case of the business organization with its own characteristics and special environment. It is required that this uniqueness be taken into account in order to arrive to useful results in attempting its reorganization.
- The ability of the organization to adapt quickly to changes that are happening inside and outside the organization especially to technological changes is the objective of the reorganization.
- Information technology is integral to the adoption of new strategies and plays a crucial role in the business environment.

T. Evgeniou has summarized these requirements very succinctly with: "In today's global competitive environment, executives need fast access to timely accurate information on any aspect of the business at any level from any perspective no matter how much or how often it changes". [5]

It is obvious that a simple installation or re-installation of the best of breed technological infrastructure and processes is not enough to create organizations of excellence. The objective and vision of an e-University project for any organization is the organizational strategy realignment which will provide the flexibility to adapt to the new challenges of constant and rapid changes happening in and out of the organization.

Bureaucratic model	Network Model	Adaptive model
focus on central administration	focus on department	focus on individual
reliance on policy, procedure	guidelines and accountability	guidelines and accountability
specific and narrow delegations of authority at high institutional level	delegation at lowest competent level	delegation on individual competency basis if possible
specialized labor	emphasis on generalists	emphasis on generalists
rewards for individual performance	rewards for team performance	rewards for team performance and value creation
fragmented central services	integration of operations	alignment of operations to institutional strategy
answer shopping	one-stop shopping	one-stop shopping
small span of control	large span control	large span control
deep hierarchy	shallow hierarchy	shallow hierarchy, agility, no boundaries
focus on function optimization	focus on system optimization	focus on sense-and-respond
civil service culture	service culture	service culture
rewards for working hard	rewards for achieving defined objectives	rewards for achieving defined objectives
merit pay for professionals	merit pay for all (where possible)	merit pay for all (where possible)

(*Adapted from "Sustaining Excellence" by R. Katz, R. West)*

Table 1: Comparison of the organizational models as used in higher education

Table 1 summarizes the progress of this vision of attaining organizational excellence as it evolved from the early 1980's with the bureaucratic model, the 1990's with the network model and most recently the 2000's with the adaptive enterprise model.

Chapter 2: The University of Cyprus - Current situation

The University of Cyprus (UCY) is now in its second decade. It took its first intake of students in 1992 after its founding in 1989. The current enrollment is close to 5000 students, 3700 undergraduate and 1100 graduate students.[6] The UCY employs, approximately, around 300 academic staff and another 300 administrative staff. The number of students currently enrolled is ten times the initial enrolment and this rate of expansion is expected to continue for the next decade to a target figure of approximately ten to fifteen thousand students. The number of academic and administrative staff is also expected to increase proportionately.

The UCY is a rapidly expanding organization and is currently comparable in size to the largest business organizations in Cyprus. Its establishment has literally brought higher education to Cyprus where before only small colleges existed. This fact, alone, has placed an enormous pressure on UCY from the community with expectations that, often, were unrealistic and many times entirely out of context. In addition to its traditional objectives of learning, teaching and research, the UCY had to establish itself in the community by bringing new knowledge on how institutions of higher education operate and behave. It should be noted here that, the UCY is a state supported institution that draws almost 100% of its budget from government support and therefore the community's concerns cannot be easily overlooked.

The UCY is slowly becoming a full-grown higher educational institution, which aims at achieving excellence in academic instruction and research. An aggressive expansion program is under way to increase the student population, establish new faculties, new departments and acquire the necessary building and other infrastructure at the new UCY campus. At the same time serious efforts are under way, throughout the UCY colleges and departments, to establish quality education and research.

The UCY has established its vision which is summarized below and included along with its mission statement in *Appendix C - The Vision and Mission of the University* (in Greek), after an extensive discussion among the UCY community. It outlines the future goals and aspirations of the University of Cyprus.

The University of Cyprus Vision:
"The University of Cyprus aims at becoming a pioneer educational and research institution, which excels in the international arena with the advancement of science, intellect and culture and which is recognized as a center of excellence, a bridge of cooperation and communication in the Mediterranean region."

2.1 The Internal Organization

The UCY has all the organizational characteristics of a higher educational institution. It is characterized by an, almost, completely independent academic department that is the nucleus of teaching and research activity and decision making. This kind of structure is unique among business organizations since it

essentially distributes both the management and the target setting to many decision centers. The uniqueness of this organizational structure has been well known, at least, since the 1970's. John R. Curry summarizes the attributes of a university organizational structure as follows:

- *People learn and change incrementally, and so do organizations. Internalize this.*
- *Universities are deeply decentralized, loosely coupled by nature. Don't fight it; get used to it. Don't lament.*
- *Knowing people and their organizational cultures is a necessary condition for transformative change. Never forget.* [7]

Other researchers, as emphasized in the previous section, have also explored the uniqueness of the university organization. The academic department is the independent nucleus of the organization where the basic decisions are made. These decisions directly relate to academic instruction and research, the basic pillars of university functions. For the UCY, the decisions at the departmental level propagate through the various university bodies and committees to the Senate and the Council. This arrangement is depicted in the diagram of **Error! Reference source not found.**. It is obvious that this structure is very different from private corporations. Here the decision-making exhibits a "bubble-like" effect. It begins at the bottom of the administrative ladder and propagates to the top through a decision making structure at almost every level. The academic department sets targets and methods to achieve those targets. The usual targets are the departmental teaching and

research activities. It also organizes itself in the best way possible to achieve those targets. The Senate and the Council are the coordinating bodies and facilitators of the decision making process. It is interesting to note that there is an on-going effort to further decentralize the decision making process in an effort to transfer responsibility closer to the consumers of services provided.

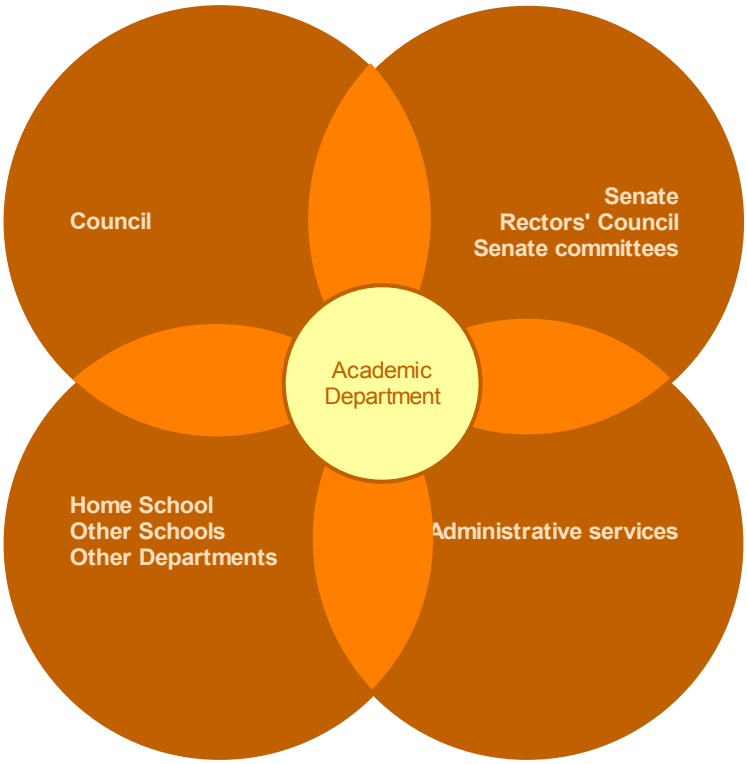


Figure 1: Academic department interaction with other bodies in a university setting

It is not very strange, in higher educational organizations, different departments to have the same basic administrative structure but also place dramatically different emphasis on their basic targets. It is very often the case that, no two departments operate at the same pace in regards to the same subject or objective. For example, departments in the faculties of Sciences are forced to operate in a much faster pace than departments in the faculties

of Letters or Social Sciences with respect to adoption of technological innovations.

Personnel from academic departments contribute to the administration of the organization by taking part in the various committees and administrative bodies like the School Councils, the Senate and the University Council. The key administrative positions in the academic structure (presidents of departments, deans, rectors) are elected positions further emphasizing the independence of each administrative unit. This arrangement creates additional challenges for the internal administration since there are many opinions and no certain common goal. Arriving to a vision and plan for the future is at best a challenging exercise. Even when a plan and a common goal seem to be within reach, the way to achieve such a goal is not at all accepted by all. Measuring success, in such an environment, is not at all trivial. Researchers of organizational models have characterized this structure as "organized anarchies"[8] and "loosely coupled worlds".[9]

The formal relationships among the different faculties, departments and administrative bodies for the UCY is presented in the next two organizational structure charts shown in Figure 2 and

.

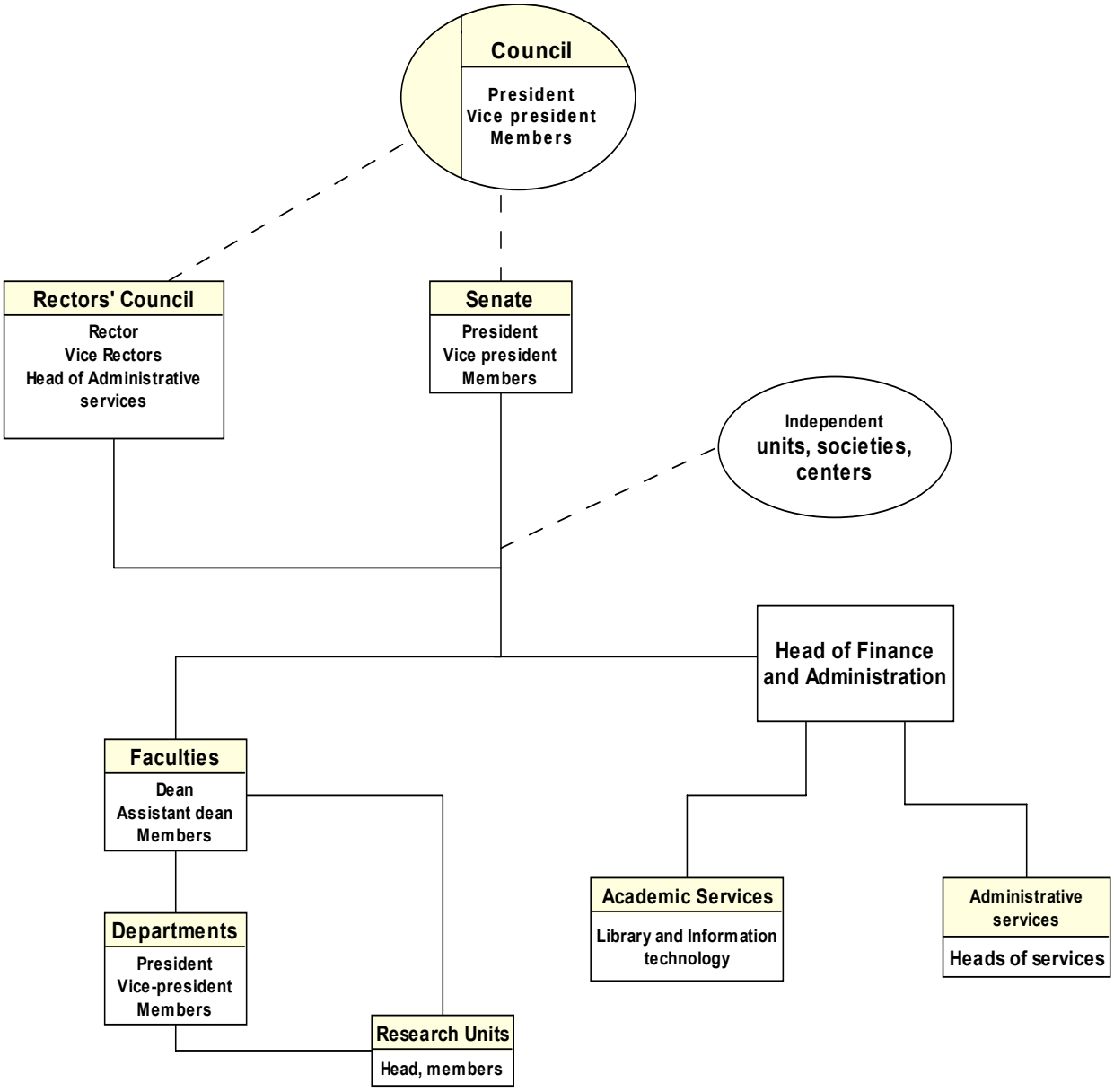


Figure 2: The organizational structure of the University of Cyprus

The second dimension in UCY administration is its administrative services. The objective of the administrative services is to support the academic departments in their mission. The role of the services is very important in carrying out the decisions of the various bodies of the organization. They

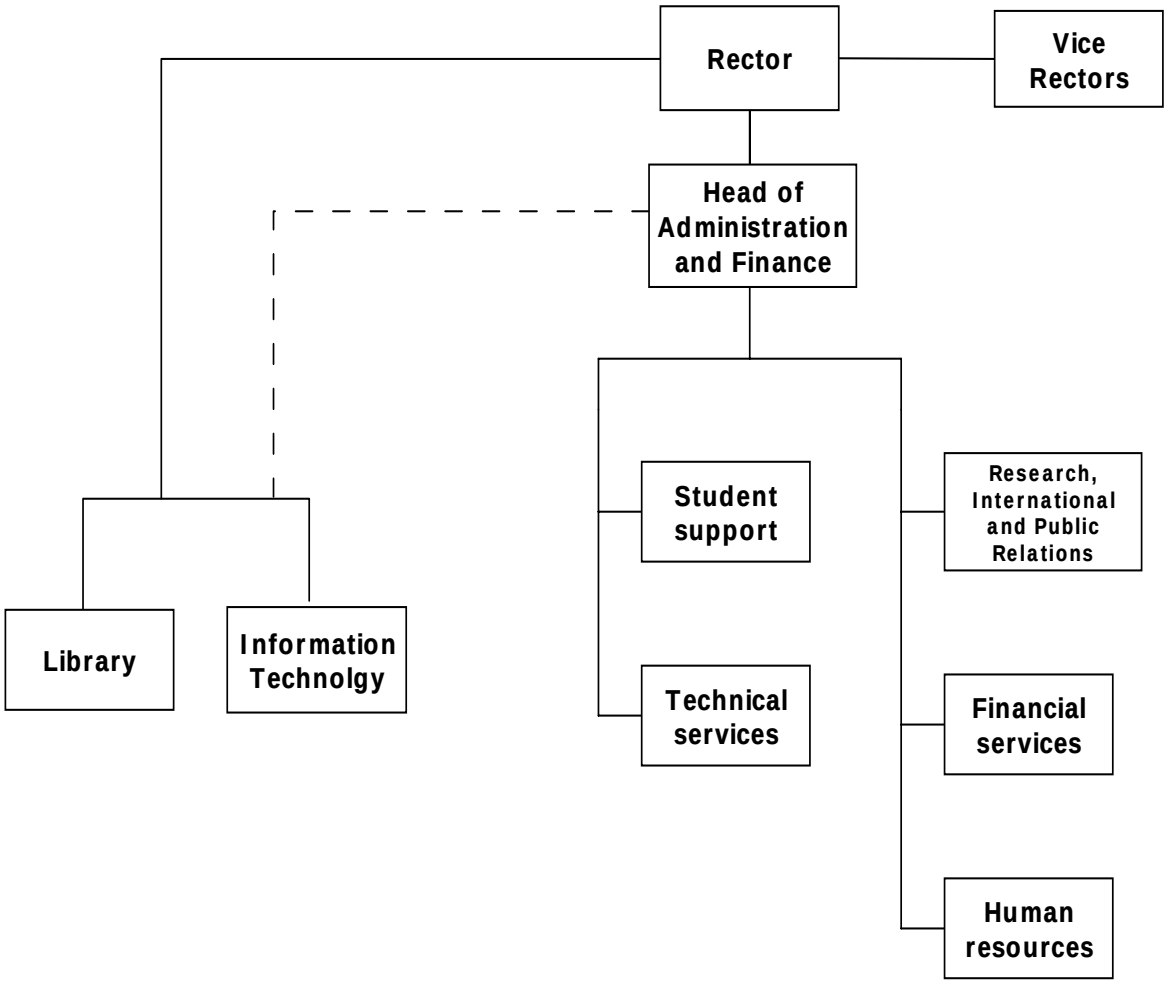


Figure 3: The organizational structure of Administrative Services at UCY

function as the executive arm of the organization, entrusted with implementing the decisions made by the various university committees. Little can be achieved if the administrative services fail to operate efficiently. The organizational chart of the relationships among the different administrative services and the top level UCY administrative bodies is show in the diagram below.

Unfortunately, the UCY administrative services were established by law to follow closely the model used by civil services. It is well known that this model is not the most efficient or the most appropriate for administering a higher educational institution. There are vast differences in the philosophy and the target constituencies of the two models. The civil services model with its inherent stability, predictability, top-down control and massive bureaucratic processes is very inappropriate for an organization where change and unpredictability are the norms. Efforts to revise this model on a more appropriate structure suited for academic institutions are under way but face resistance, primarily, among the administrative personnel.

2.2 The e-University initiative

The complexity of administering a large organization like the UCY is significant. The usual approach of managing and organizing such a large body of people is to formulate, publicize and enforce procedures and rules so that everyone knows how to operate and where the limits are. Very often the resulting outcome of such rules and procedures is that excessive red tape and procedural burdens are placed on the organization. The organization becomes inflexible, difficult to operate and even more difficult to change. Often, the real objective of the established procedures is forgotten and the procedures themselves become the end goal. Individuals will hide behind procedures in their daily activities becoming unable to serve the primary aim of the organization.

The UCY has identified the problems with the current administrative model and the need for providing a better environment for the organization to operate in. This environment aims at providing an “easier and faster access to its services and information resources to the University community (faculty, students and staff) and to the external community (alumni and the public).”[10] The e-University project has been initiated to exactly serve this purpose. The challenges, opportunities and objectives the e-university project addresses are:

- the attainment of the articulated vision and mission of the University which aims at
  - academic excellence
  - a work environment based on service speed, quality and productivity
- the pressures from the government to reduce or contain budget and to attain better financial efficiencies
- the ongoing efforts for improvement in service provision to the UCY community that will enhance the way the organization operates and responds
- the desirable high levels of effectiveness, efficiency and satisfaction in learning and research in order to be able to compete in a pan-European environment
- the sharing of UCY resources among various bodies, service centers and individuals that have a need for such services in their daily work environment

- the expanding competition environment in the higher educational sector from new public universities (Technological University of Cyprus, Open University) but also from private colleges, especially those preparing to enter the university education market
- the constrains that the system imposes on the UCY leadership
    - inability to take strategic decisions due to the lack of information
    - lack of time and resources due to the preoccupation with lower level decision making processes
    - the complexity of managing the organization due to the expanding population and its expanding scope (schools, departments, units and research centers, public and other constituents)
- the deep hierarchy evidenced by the organizational structures presented above and the reliance of the organization on procedural directives which create an inflexible system unable to operate efficiently and in a timely manner
- the antagonization environment among the academic units and the administrative services which was detected by the European University Association review committee.[11, 12]

Because of the difficulties and constrains above, the attainment of the expressed vision of academic excellence in a European setting is unlikely to be realized unless the issues are mitigated. Such a vision can only be achieved by a flexible, adaptable and quick acting organization. The ability for

high level administrators to take quick actions based on information that is both extremely timely and accurate is becoming a pressing need. The present bureaucratic processes and organizational structure cannot produce such timely information. This fact has, very recently, been articulated by Dr. Stavros Zenios, rector of the University of Cyprus, in his foreword to a UCY publication on its organizational structure: “In an organization, as the contemporary European University, where the objectives are the production, capitalization and dissemination of knowledge, uncertainty rather than certainty and autonomy rather than central control are the main characteristics which the organizational structure must encourage and manage effectively. In this way effective order emerges from constructive disorder and the productive organization is enhanced from disorganization that is imposed by continual innovation”.[13]

2.3 E-University project work until now

The University of Cyprus, taking into account the various challenges faced by the organization outlined above, has already identified its strategic direction towards an e-University business strategy. In order to materialize such a strategy it has taken several preliminary steps and has undertaken the following initiatives:

- the top level administration has communicated its commitment to proceed with an e-university strategy
- several information gathering and dissemination sessions were carried out to inform the UCY community of the e-university commitment and gather ideas

- a consultancy project was assigned to IBM Cyprus to prepare a high level strategy document for the steps required to implement an e-university. This consultancy has produced several position and analysis documents. As part of this report, the UCY community conducted a formal survey and formal interviews among its staff and students. The survey and interviews are analyzed in the next section.
- a public tender has being prepared for the procurement of systems and services that are in pressing need
- the public tender requires external providers to prepare an in depth analysis of requirements and process reengineering, prepare proposal for the process restructuring and starting the first phase of the e-University project
- an e-university office has been provisionally established and has helped with the preparation of the IBM consultancy report and with other procedural matters

Chapter 3: The e-University survey and interview results

As part of the IBM consultancy report, UCY personnel worked with IBM Cyprus to prepare and conduct a survey to examine how the University personnel see the priorities of a possible implementation of the e-University project and specifically the proposed University Portal services. In addition, formal interviews with many UCY personnel were conducted. The results of the survey and the interviews are outlined below. The detailed outcome of the survey is included in *Appendix A - The University Portal Survey*. The detailed responses of the interviews conducted with administrative personnel and students are provided in *Appendix B - The e-University administrative interviews.*

The survey questionnaire was prepared, administered and results analyzed by a small group of University personnel with assistance from IBM personnel. I personally helped with the preparation of the questionnaire and analysis of the questionnaire results. Most of the interviews were conducted by IBM personnel with the assistance of University personnel. I was also one of the interviewees with my capacity as one of the technical managers of computing equipment of the University.

3.1 The survey and the interviews

The survey was divided into two questionnaires, the staff questionnaire and the students' questionnaire. Both included questions that asked the participants to rate, from a scale of 1 (least important) to 5 (most important),

the importance of various functions of the future e-University portal. For example, one question was asking the participant to rate the importance of the ability to *"Check your library account (view reservations/books on loan etc)*". The complete details of the survey questionnaire are presented in Appendix A.

The questionnaire was specifically chosen to deal only with the e-University Portal system rather than the entire e-University strategy adoption. The portal system is the visible part of the e-University strategy and therefore the easier to understand. It was assumed that, since the use of web portals is widespread in the commercial world (financial institutions, for example, use them in their e-bank systems) many non-technical faculty and student participants would be familiar with them and therefore be in a better position to understand the survey questions and provide meaningful responses.

Each survey was composed of groups of questions with each group having a specific functional objective. The groups were the same for both the staff and student surveys. Some questions were different within each of the groups to better reflect the needs of the survey participants. The groups of questions were:

- Administration
- Teaching and Learning
- Research
- Personalization

- Library
- Communicating
- News and Information

The students' questionnaire was distributed to several student classes and completed as part of the students' final class evaluation procedure. Several departments were selected including computer science, history, psychology, mathematics, electrical engineering and chemistry. Because of the way the survey was administered, the exact number of students that participated is not known but it is estimated that as many as 500 students were targets of this survey. From the data collected it is estimated that the participation ranged from approximately 400-450 answers based on the particular question. This amounts to approximately a participation of 10% of the whole student body. This method of administering the survey allowed the survey to record not only the responses to the questions but also the department of each participant. This information has been recorded and is available for future analysis, if the need arises.

The staff questionnaire was distributed to a randomly selected group of staff, both academic and administrative. The distribution included several departments and services. Teaching personnel received a staff questionnaire along with the student questionnaire, which they conducted, so the distribution included at least the departments mentioned above. Unfortunately, the total number of distributed questionnaires is not known. The participation ranged from 20-25 participants for each answer. Approximately equal numbers of

academic and administrative staff took part. The participation is approximately 5% of the staff numbers. From the data shown in Appendix A information is also available on how the two groups (academic, administrative) responded to the survey.

3.2 The survey results

An overall summary of the survey results is shown in figure 4 and figure 5. The figures show the total number of responses received for each importance level for all questions-answer groups (1 to 5, least important to most important). Figure 4 shows the responses received from staff members and figure 5 shows the responses from student participants. Based on these two broad summary figures of the survey outcome, it can be generally concluded that the survey participants show a clear tendency to support the implementation of a portal system that will give them better access to needed information and ability to reach such information thorough a portal system.

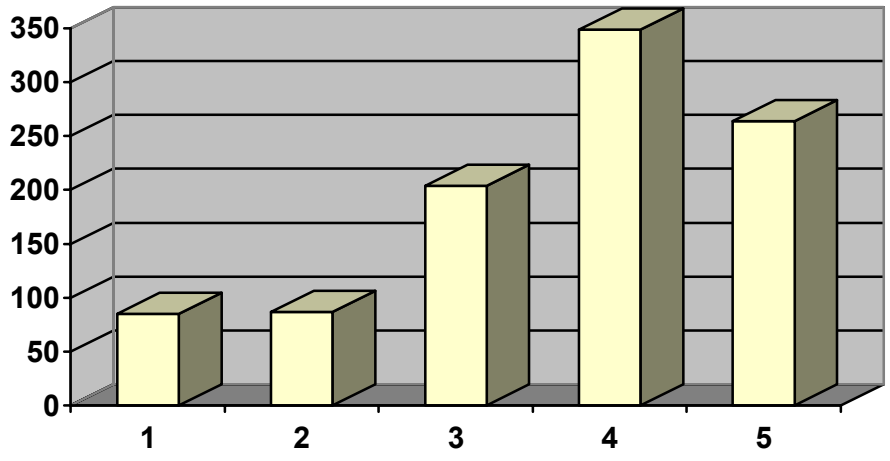


Figure 4: Sum of reponses per importance level (1 to 5) from staff members

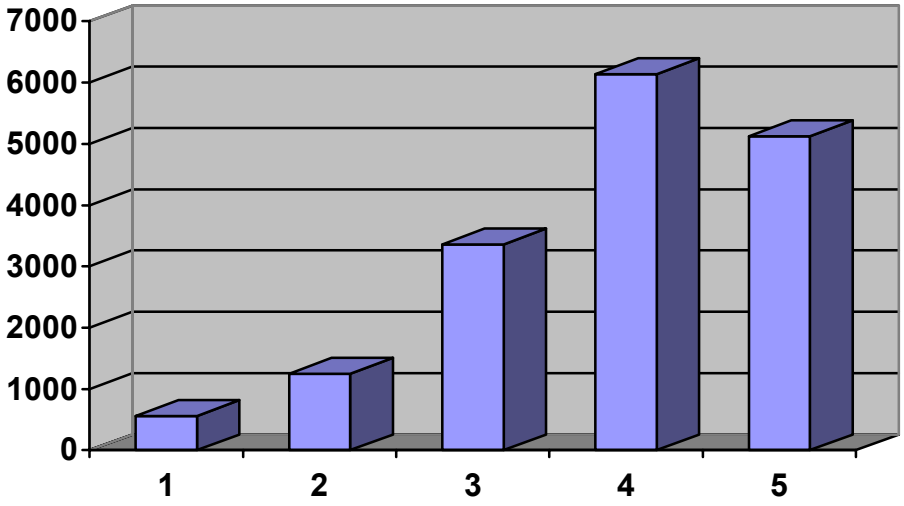


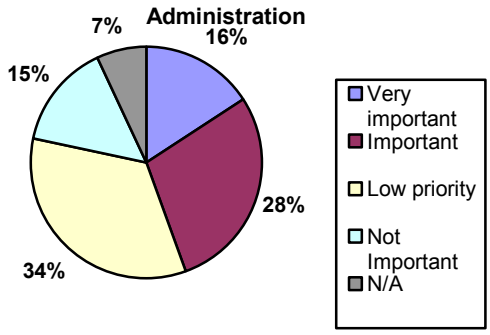
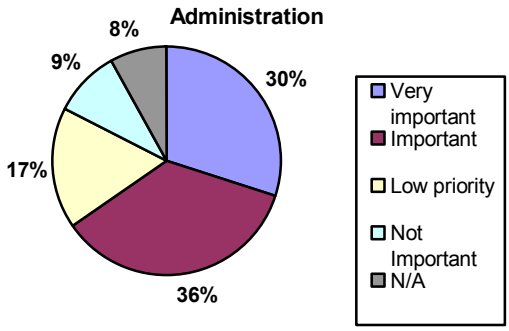
Figure 5: Sum of reponses per importance level (1 to 5) from students

It is important to note that this tendency is clearly stronger in the student body than in the staff members shown by the stronger cluster of answers in levels 3, 4 and 5.

The tables that follow analyze in more detail the survey results per group of questions: administration, teaching and learning, research (for staff only), personalization, library, communicating, news and information. Each table is divided into two columns: the staff survey and the students' survey. Each section presents the questions asked and the results received. It is important to remember that the survey asked the respondents to rate the importance they place on each of the statements presented from 1 (least important) to 5 (most important). The exact survey and the detailed results can be found in Appendix A.

The results received are summarized per group of statements and are presented in the respective pie charts as percentages for each importance level against the total number of responses received. There is also a brief comment section at the bottom of each table, where appropriate, that draws attention to important information for each question group. It also emphasizes possible weaknesses for that particular question group. Such weaknesses might be important aspects of the subject that were not mentioned or statements that were difficult to understand and were discovered after the survey was conducted.

Survey questions and results - Administration

Staff survey	Students survey
Check the availability of rooms and make room bookings	Select the courses you want to take and register online
View your university salary statement details	Review the courses you are taking and change them if you need to
View/update your (university) annual leave record	Pay fees for tuition online
Submit orders and pay invoices	Change your personal details, e.g. address, email etc.
	

Comments:

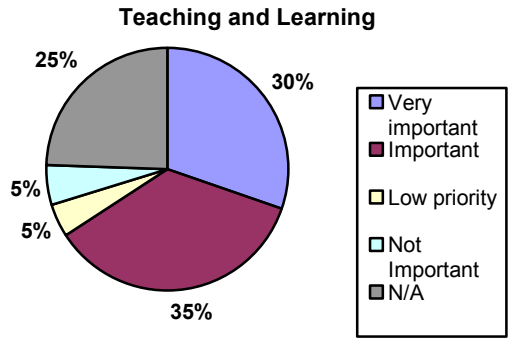
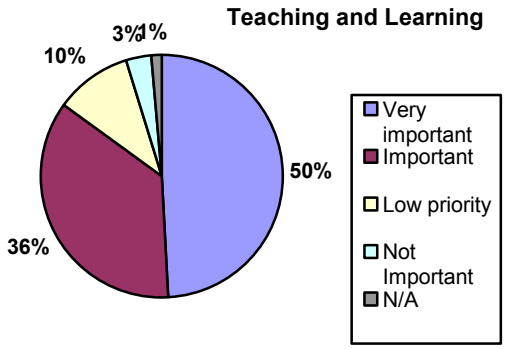
There is a clear indication from both of the surveyed groups that there is a general concern with the current status of the daily administration of the University. Students are clearly more enthusiastic about a better system which may partly be attributed to the higher impact such a system has on their student life.

A significant number of administrative functions were not included in this group of questions which may explain the not so "enthusiastic" staff response. This group should have included:

- ability to view financial records especially research project financial records
- ability to submit and receive information on public tenders including the requests submitted, the state of such tenders and decisions taken by University bodies
- ability to manage correspondence on a personal level but also for groups/departments (document management systems)
- ability to manage an electronic correspondence filing system

Table 2 : "Administrative" questions group survey results

Survey questions and results – Teaching and Learning

Staff survey	Students survey
Access/update teaching/learning materials for your course/modules	Access teaching/learning materials for your course/modules
Access/update reading lists	Access reading lists
Access course timetables	Access course timetables
Access exam timetables	Access exam timetables
Enter grades for exams or coursework	View all the grades for your courses
View all the grades for your course/modules	Submit coursework
Receive coursework	View information about further study (postgraduate) possibilities
	

Comments:

There is a clear and overwhelming interest by survey participants, in this group, to see such electronic solutions in the daily management of classes. This is not surprising since most students and academic staff spends large amounts of time to manage the "teaching and learning" experience. This group could have been enhanced further by including more e-learning capabilities such as:

- ability to view lectures in an asynchronous mode (after the event)
- ability to review in-class instructor notes after the formal lecture
- accessibility enhancements for the hearing impaired, blind and other disadvantaged individuals

Table 3: "Teaching and Learning" questions group and results

Survey questions and results – Research

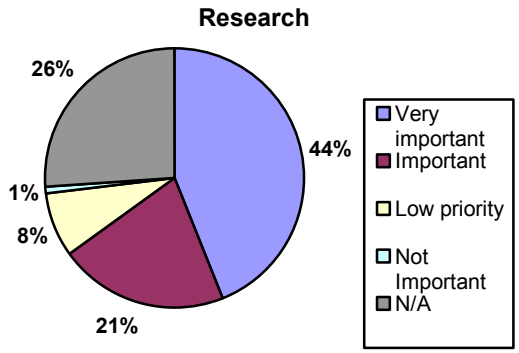
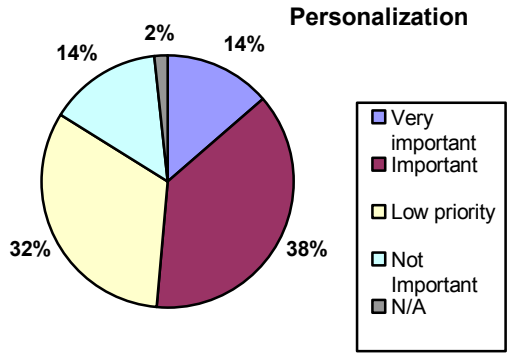
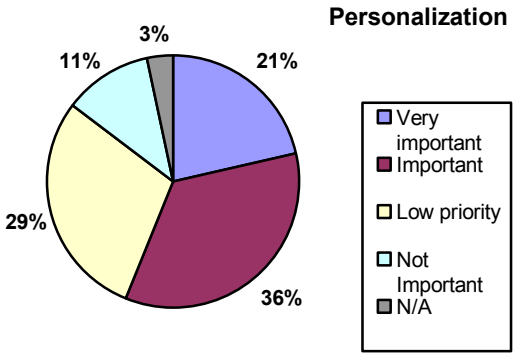
Staff survey	Students survey
View funding opportunities View project latest financial information Request Cost Statement Request Issue of Payment (within a project) Ability to view/ add to the University Publication database	Not applicable
	
Comments: Research is a fundamental aspect a healthy academic institution. Minimizing the time spent on managing research projects allows researchers to focus on their work. It is clear from the results that the majority of academic staff would like to see a system that will minimize time spent on the management of their projects.	

Table 4: "Research" questions group and results

Survey questions and results – Personalization

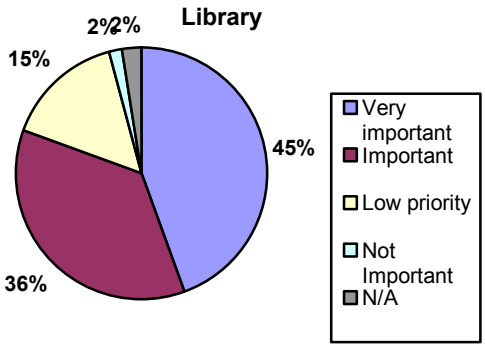
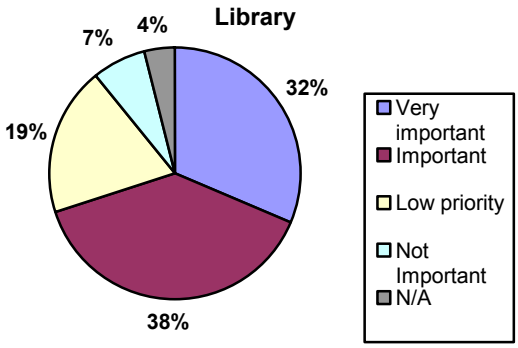
Staff survey	Students survey
Receive personalized announcements (e.g. relevant conferences)	Receive an alert when a coursework deadline is approaching
Receive alerts for staff development events	Ability to change the look and feel of your portal screen
Receive information about jobs available within the university	Ability to control what information is displayed in your portal screen displayed and where it appears
Ability to change the look and feel of your portal screen	
Ability to control what information is displayed in your portal screen displayed and where it appears	
	

Comments:

Personalization is the ability of the software system to recognize the user using it and behave in a customized manner. The user is able to change the customization. While such a system eventually becomes a necessity in an organization that generates large amounts of electronic information, the need of such an implementation is not clearly visible from the start of an e-university system. The results show a large number of survey participants (32% and 29%) feel this is a low priority aspect of the system, which enforces the assumption above.

Table 5: "Personalization" questions group and results

Survey questions and results – Library

Staff survey	Students survey
Check your library account (view reservations/books on loan etc)	Check your library account (view reservations/books on loan etc)
Renew library books	Renew library books
Search the library catalogue	Search the library catalogue
Pay library fines online	Pay library fines
Reserve an item	Reserve an item
Search your favourite library e-resources or web sites	Search your favourite library e-resources or web sites
Perform an internet search - using the Google search engine or similar	Perform an internet search - using the Google search engine or similar
Search university web pages	Search university web pages
	

Comments:

The UCY library has already implemented some technological web based solutions for the services it provides. The electronic catalogs, information, abstract and index databases of various forms and the ability to use web tools from remote locations in searching these databases are the most important ones. In spite of this fact, the library remains very popular among the UCY community for further development of the interface.

Table 6: "Library" questions group and results

Survey questions and results – Communicating

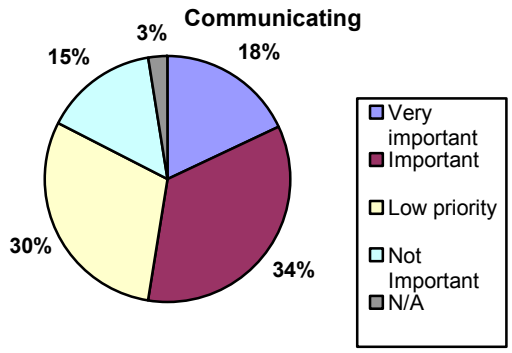
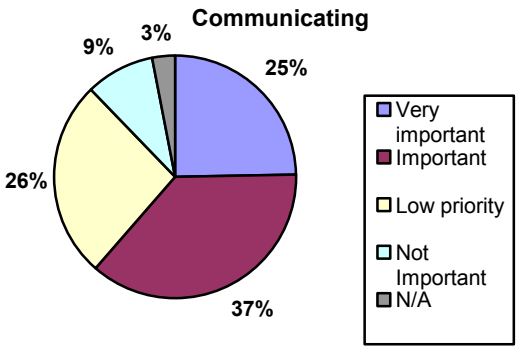
Staff survey	Students survey
Send instant messages to friends or colleagues	Send instant messages to friends or colleagues
Access discussion boards for your courses/modules	Access discussion boards for your course/modules
Access general discussion boards	Access general discussion boards
Access institutional calendar - keep track of university events	Access institutional calendar - keep track of university events
Access personal calendar	Access personal calendar
Access shared calendars - keep track of other staff and/or departmental events	Access shared calendars - keep track of department/school events
Have the option to integrate other calendars in your personal calendar	Access shared calendars - keep track of social/sports societies events
Access university email account	Have the option to integrate other calendars in your personal calendar
Conduct an online survey of students/staff	Access university email account
	Take part in an online survey
	Vote in student elections
	

Table 7: "Communicating" questions group and results

Survey questions and results – News and Information

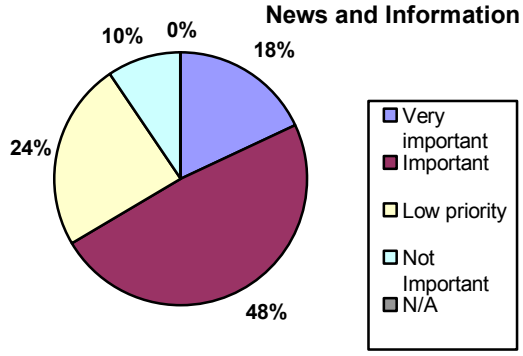
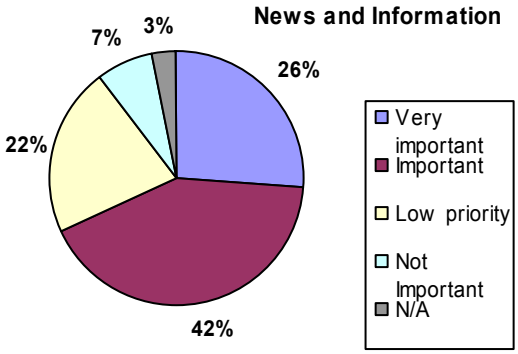
Staff survey	Students survey
Access university related news and information about university events	Access university related news and information about university events
Access weather forecasts	Have local or national news delivered/accessible
Have national news delivered/accessible	Access official forms, policies, other documentation
Access information about university/departmental social events	Access course/department/university handbook
Access official forms, policies, other documentation	Access up-to-date telephone/email directory for university staff
Access course/department/university handbook	Access campus maps/directions
Access up-to-date telephone/email directory for university staff	
Access campus maps/directions	
	

Table 8: "News and Information" questions group and results

It is interesting to note that the top ranking groups are the “Teaching and Learning”, “Library”, and “News and information”. Also the “Research” group is highly ranked among academic staff. Table 9 below summarizes the percentages received for importance levels 4 and 5 (important, very important) for each group of questions and computes an average among the two groups of survey participants. The three most important groups are: Teaching and Learning, Library, New and Information.

	Staff (%)	Students (%)	Average
Administration	44	66	**55**
Teaching and Learning	65	86	**75.5**
Research	61	N/A	**61**
Personalization	52	57	**54.5**
Library	81	70	**74.5**
Communicating	52	62	**57**
News and Information	64	68	**66**

Table 9: Summary of survey results. Importance levels 4 and 5 for each group.

3.3 The Interview results

Interviews were also conducted with a large number of individuals in the University community in order to gather their input. In the interviewed group were included all high level officials from both academic and administrative bodies, other key individuals that were evaluated as important due to their professional function and a group of students both graduate and undergraduate. Detailed notes were kept for the interviews conducted with administrative staff, the graduate and undergraduate students and are

presented in *Appendix B - The e-University administrative interviews* on page - 97 -.

Table **10**, below, summarizes the responses received from these groups in general terms which are useful for the purposes of the e-University project.

- Most service provision is based on manual paper processing with request to the department that has access to the information needed
- Duplication of data is widespread
- Many software systems lack functionality that would help service provision
- There is no process engineering or reengineering procedures in place. This, sometimes, results in the wrong departments processing of data (ex. human resources has no access to payroll)
- There is no notion of self service culture
- There is no connection or integration between already installed systems (ex. human resource or student system with financial processing)
- All communication is paper based; no workflow system exists
- There are still technical and communication difficulties that need to be addressed (VPN access, limited student access)
- There is no notion of a University wide web content generation and update for the central web site. Even static university information is very hard to get and is mostly based on printed material.
- Current institutional web site is very difficult to navigate and with mostly outdated information.
- Most instructional material is paper based. Use of IT in class content preparation is quite limited
- Non-computer related departments reluctant to use new technologies
- E-Learning needs to be expanded from its current form of very limited class material generation only; this will help the University to reach more members of the community like overseas Cypriots
- There is a general fear among students that establishment of information technology driven processes (ex. registration) will bring an impersonal treatment that will make it difficult to achieve certain goals (ex. access to classes on a first come first served fashion rather than on a per needed basis based on achieved student status).

Table 10: Summary of interview responses with administrative staff and students

Unfortunately, the details of the interview sessions with academic officials and personnel have not been recorded in any detail for each person interviewed

but the general responses given have been preserved in the IBM consultancy report.[14]

Table 11: Summary of interview responses with academic staff, below, summarizes in general categories the responses from the academic community.

- The UCY has not yet communicated effectively an overarching e-University vision, even though such a vision exists and several sessions have been organized
- There are many strong departmental goals and objectives that need to be integrated into a universal vision for better coordination
- No service reengineering notion exists
- Fragmented flow of processes
- Lack of knowledge management at the institutional level
- There is a lack of cross-departmental communities and communication
- No on-line access to central administration systems
- Reliance on paper communication, including course material distribution
- Inefficient and cumbersome management of research grant projects
- Ineffective use of IT tools in teaching and research
- Inefficient communication channels between faculty and students
- Limited IT exposure for students
- Limited awareness of e-Learning methods and processes among both teaching staff and students
- University portal is based on static web pages with outdated information that does not truly represent the current state of UCY

Table 11: Summary of interview responses with academic staff

3.4 Survey and Interview Conclusions and Remarks

Based on the survey results, interview results and the general information gathered from discussion sessions that were held, the following overall conclusions have been arrived at:

- The use of the internet and the related web technologies in the daily business function of the UCY is quite low (with a possible exception of the Library). Figure 6 show a comparative bar graph of the use of web technologies in some of the most important functions of the University that are used in its daily business in various administrative services. The chart has been compiled from the opinions expressed among University officials and personnel during the formal and informal interviews. The bar chart shows that the Library is a clear leader in utilizing web based technology in many of the services it provides (ex. searching the catalogs). Most other units, departments or administrative services have yet to develop the most basic of automations and web awareness. They are mostly based on paper based processes which dominate their entire functions. The general impression is that paper based or in-person communication is widely used throughout the University.

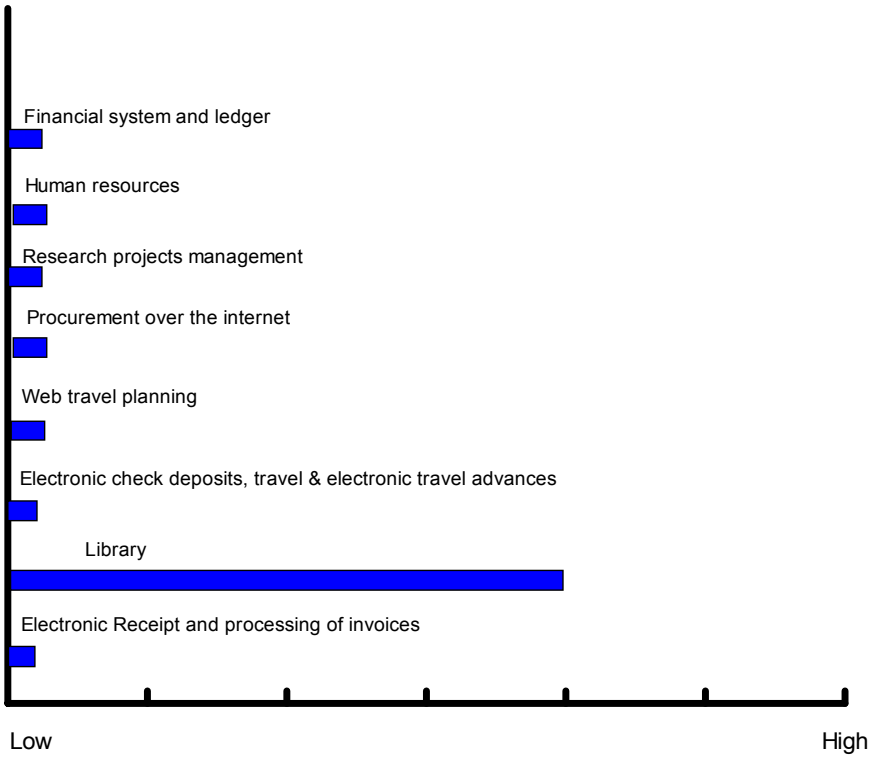


Figure 6: Utilization of web enabled technology at the University of Cyprus.
(Adapted from "A new Business Architecture" http://uc2010.ucsd.edu)

- It is very interesting to note that even though the Library is the only business center that uses, to some extend, effectively web technologies, survey participants ranked this sector as the most desirable for the use of this technology (81% of staff members and 70% of students ranked it as very important or important). This leads to the conclusion that exposure to technology enhances awareness on its capabilities and functionality, which in turn leads to further acceptance and higher demand levels from the part of the users. Consequently, user exposure to the technology eases its introduction in other business centers of the organization.
- There is a wide gap of technological knowledge among the UCY constituents of what the technology can achieve. Many non-technical

individuals do not clearly grasp the functionality that is being sought by an e-university strategy. Many believe that an e-university is simply an installation of new hardware systems and software to increase the technical abilities or correct existing problems.

- There is skepticism on the ability of the UCY to carry out such a large and comprehensive project. This can, partly, be attributed to past failures of large information technology projects or projects that have not produced visible results or produced very little of the promised functionality.
- There is concern that while the e-University is not exactly a technical project, it will deteriorate to one and the business culture change part will soon be forgotten.
- There is fear, especially among students, that the introduction of technology will make it difficult to solve some of the issues they face (especially during registration periods). There is fear that complications that arise during the registration periods cannot be solved by an automated system and the intervention of humans is necessary in such situations.
- The participation of academic staff members in the presentations and idea gathering sessions was not as high as expected.
- The need for change to a more modern, flexible environment where the individual will be empowered to finish desired tasks in a timely manner even from remote locations has been recognized by all, both in the survey results and the interviews.

- The survey results showed that the students are more eager the embrace new technologies and service delivery methods and have therefore indicated higher importance levels than staff in practically all the survey question groups.

Chapter 4: E-Strategy projects at other institutions

The first efforts to integrate business functions in higher education with the institutional information technology (IT) systems came as early as the beginning of the 1980's. One of these pioneering efforts was recorded in the study *"Administrative Systems Architecture"* by D. J. Ernest and C. S. Bennett in 1983 and published at Stanford University, where they described their famous "wheel" architecture depicting a unified service system (shown in figure 7).[15]

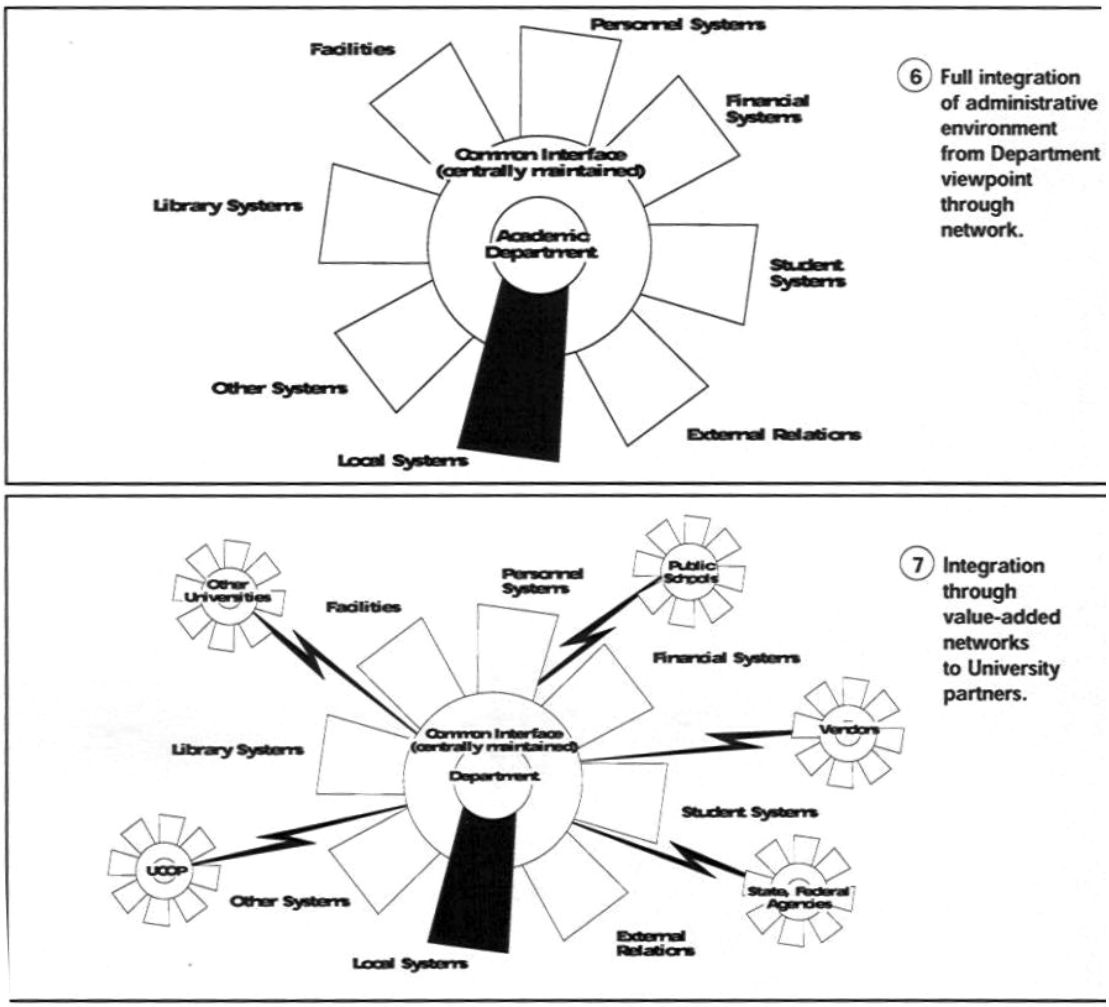


Figure 7: The "wheel architecture", a unified service provision system

The efforts in those early computing days tried to exploit the computing environment of mainframes and large centralized computing systems in unifying the provision of basic services like student registration and financial services. In the years that followed, the systems and strategies that were employed followed closely the technological changes and were continually revised and readjusted to take advantage of the improvements.

The e-University projects, in the form we know them today, begun as early as the beginning of the 1990's. Technological advances in the early 1990's in, primarily, communication systems, like the widespread introduction of the internet and the invention of the World Wide Web, begun to allow use of the computing infrastructure for much more demanding business applications in much easier ways for the user. Communication systems begun to allow the integration of dissimilar systems at distributed locations in a better and more efficient way. This allowed the direct communication and interaction between different systems irrespective of their location. The first pioneers realized the potential business advantages of such a technological capability and expanded their computerization efforts to bring together a multitude of applications in reworking the business processes necessary for higher education. Their efforts were always driven by efforts to create advanced business systems that lowered costs and provided better services to the community.

It is without doubt that, the common and central theme in all e-University or e-Strategy initiatives that were undertaken is the emphasis that such an

initiative is not another simple IT project where we replace some technology with some newer one. It is not a project of simply adding a new better looking interface (now called a Portal) in front of the good old applications. The e-University initiatives emphasize strategic business initiatives and changes with the main aim the reorganization of the corporate processes with IT at its center as an enabling workhorse. Pioneering institutions such as the University of California[16] and the University of British Columbia[17] are now in their third round of reorganization based on information technology as the center of their model. Many other higher education institutions like the University of Warwick[18] and the University of South Queensland[19] are just finishing their first attempts or are in the process of adopting the same basic model.

The efforts of the four institutions above in adopting an e-Strategy are presented below in very short summaries for the:

1) University of California, one the first pioneers and still an institution that is on the forefront of the efforts,
2) University of British Columbia, also one of the pioneers
3) University of Warwick a small university in the European region and
4) University of South Queensland, a relatively small and new university with a strong emphasis on distance learning methods (e-learning).

4.1 University of California system – Comparing against the best

The University of California (UC) system is a huge institution with about 200,000 students in total, spread around the California state in the United States. It is made up of ten campuses each one of them being a very large

campus. It first established operations back in 1869. The UC is so large and complex that there is little obvious correlation with it and the University of Cyprus. The UCY though can learn a lot from the work of this pionner institution.

The University of California is mentioned here as one of the first institutions that pioneered the focusing on IT infrastructure as an enabling technology for an institutional e-Strategy. In its latest reexamination of its efforts, it started a project in 2000 named "*A New Business Architecture for the University of California*" (http://uc2010.ucsd.edu). This project is actually reworking the previous reengineering efforts to provide even better services and attempt to address the challenges faced by changes that are happening around and inside such a large organization.

The UC efforts to adopt an IT centric system of business has produced several studies since the early 1990s that are available to others to adapt to their own environment. Many pioneering professionals started their careers at this UC. Their latest ongoing effort is aiming at the creation of a new business architecture, which focuses the attention "on the critical role of the individual staff in delivering business and administrative services to the University".[20] The evolution of this notion is depicted in one of their framework figures shown below and emphasizes the need for "business architecture for the first decade of the 21st century (that) will serve as a compass to navigate through a rapidly changing environment". [21]

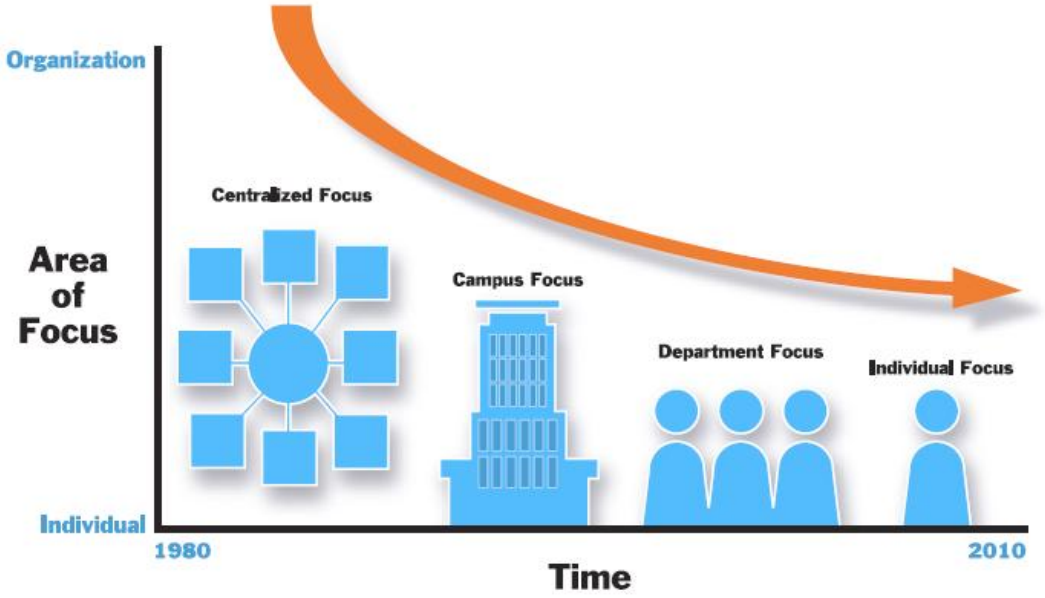


Figure 8: Progress of organizational focus at the University of California

The guiding principles of this new strategy have been defined as follows:[22]

- ***Enhance Individual Employee Productivity*** *– Provide flexible tools that individuals can use to perform their roles more effectively*
- ***Encourage Collaboration and Partnerships*** *– Form alliances with other departments, campuses, institutions, and businesses in order to further the University's goals.*
- ***Manage Technology as an Investment*** *– View technology as an investment, rather than an annual expense, that will yield return in exchange for up-front expenditure and assumption not risk*
- ***Focus on Outcomes*** *– Measure and assess people, projects and teams by what they accomplish.*
- ***Strive for Simplification*** *– Develop tools that can be flexibly applied to reduce the complexity of University business processes. Continually*

measure approval points, hands-offs, waiting intervals, training requirements and cycle times.

The objectives of these strategies are:

- *A collaborative environment where staff have ready access to the tools necessary to do their job efficiently and effectively*
- *A workplace that allows University staff to maintain high levels of job satisfaction while providing the highest levels of customer service*
- *An environment where technology solutions minimize time spent processing mundane, routine transactions*

Of even more importance for small universities, like the University of Cyprus, is the participation of the University of California system in the pioneering initiatives that it takes part. Such initiatives are the participation in the JA-SIG (Java Applications Special Interest Group - www.ja-sig.org) group and the knowledge generation from research and initiatives undertaken. Both of the above generate knowledge that it would be extremely difficult to obtain within a setting of small university.

The JA-SIG is attempting to produce the technical details necessary for a quick adoption of a campus portal. It has developed a portal framework that can be adopted by universities and be adapted to the local environment of each new institution. The practical outcome of this framework is an actual software implementation in the uPortal system.

An example screen of the University of California portal system is shown in figure 9 below.

Figure 9: The University of California portal

4.2 University of British Columbia

The University of British Columbia (UBC) in Canada is also a large institution that has pioneered the efforts with e-University strategies. It currently has 50,000 students spread around four campuses. It has also been a pioneering

institution in establishing e-strategies for its community. Like the University of California, UBC is going through a new cycle of reengineering based on its Trek2010 vision (www.trek2000.ubc.ca). It has a strong dependence on IT technologies as their core system for implementing their e-Strategy. Their strategy (similar to that of UC) is depicted in the framework (figure 10) below which summarizes the components of the project. These are:

23

Figure 10: A representation of the e-Strategy framework at UBC,

- E-Community – develop "a more supportive and productive online environment for everyone at UBC. e-Community includes the development of Web-based tools that make it possible for us to work, learn, collaborate and communicate together more effectively, using technology"
- E-Learning - focuses on improving the overall learning experience of UBC's community by strengthening and coordinating support networks

and providing appropriate tools and infrastructure for using technology in innovative and effective ways.

- ❖ E-Research – focuses on the use of technology to carry research tasks and administer research projects
- ❖ E-Business - makes campus services available to students, faculty and staff on the Web.

UBC's portal is shown in figure 11 below.

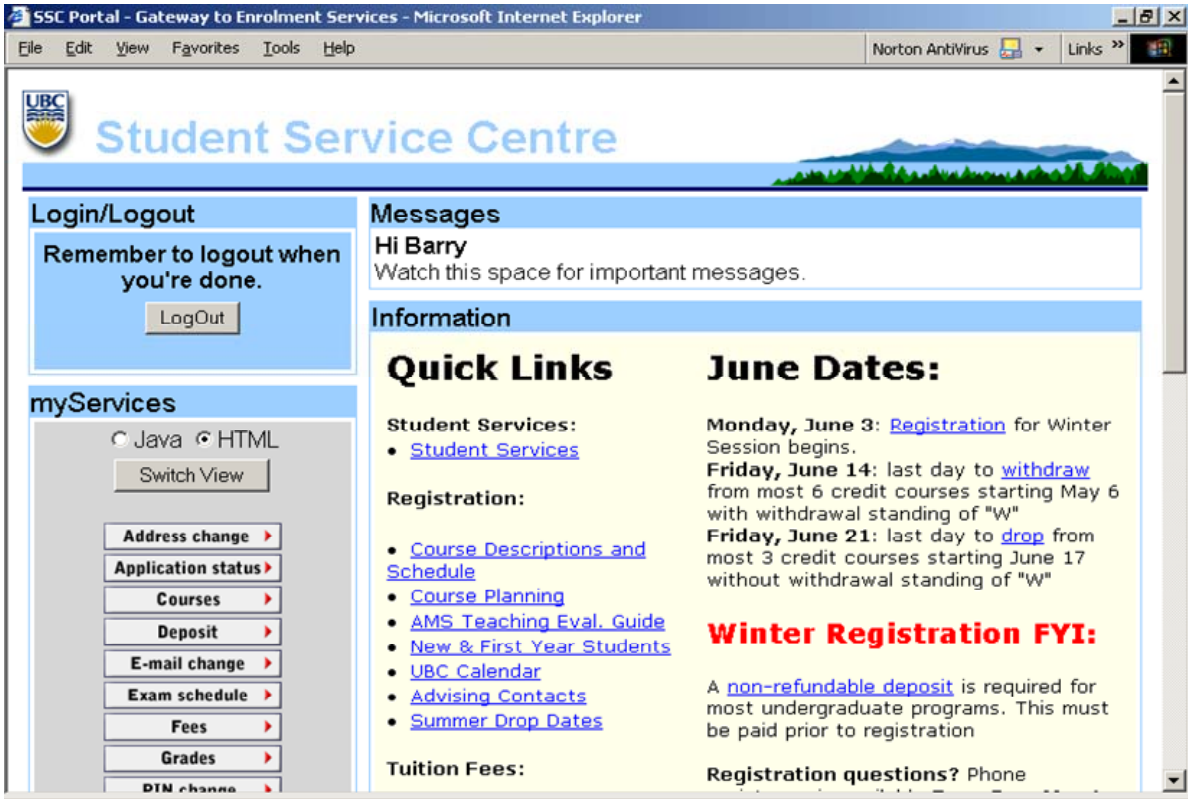


Figure 11: The University of British Columbia portal

4.3 University of Warwick

The University of Warwick is a relatively young and small university. It was established in 1965 and it now has around 15,000 students. Its young age, small size and European location (United Kingdom) have direct relevance to the University of Cyprus. Actually, the University of Warwick is very much like the University of Cyprus in size, only ahead in time by 10-15 years.

In spite of its small size, the University of Warwick has successfully implemented an e-strategy program since at least 2000.[24] Warwick has developed its strategy around three university missions: Teaching and learning, Research, 'Innovation and Enterprise'. Three main objectives were developed from these missions.

- Extend [the] repertoire of teaching approaches and the effectiveness and efficiency with which we interact with, and provide for, our students
- Make Warwick the best of places in which to think, research, create and collaborate
- Compete within a commercial world that is already using technology to achieve global reach, improve customer responsiveness and reduce operational costs.

Various groups and committees were formed to implement this e-strategy. On One of the results was the creation of a comprehensive portal system from which students and staff can reach information and applications to carry their daily activities.

An example of the Warwick portal is shown in figure 12 below.

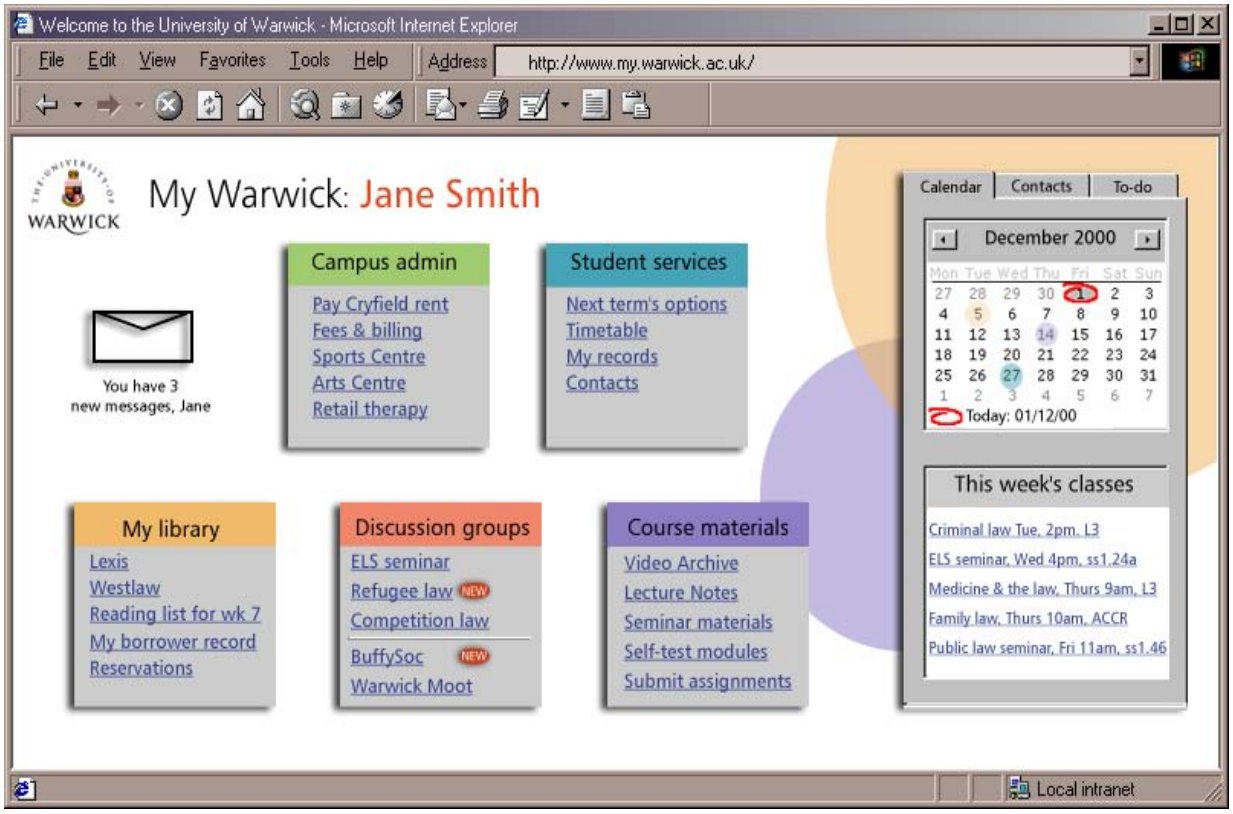


Figure 12: The University of Warwick "My Warwick" portal

4.4 University of South Queensland

The University of South Queensland (USQ) is unique among higher educational institutions because it has a large proportion of its students studying from remote locations with open learning methodologies. As many as two thirds of USQ students study remotely using electronic study aids, many of them from overseas locations.[25] E-learning is a strong component of the institution, which has successfully implemented remote learning for a number of years in various faculties. The remote learning component has attracted a

large number of international students that study for their discipline while working at their home country.

E-learning methodologies depend on advanced technological solutions to bring instruction to the student rather than the student to the instructor. The internet plays a crucial role in delivering the instructional material which can be in the form of video sessions, classroom notes and material and even e-books. The internet is also used to establish video conferencing sessions for a one-to-one or group communication.

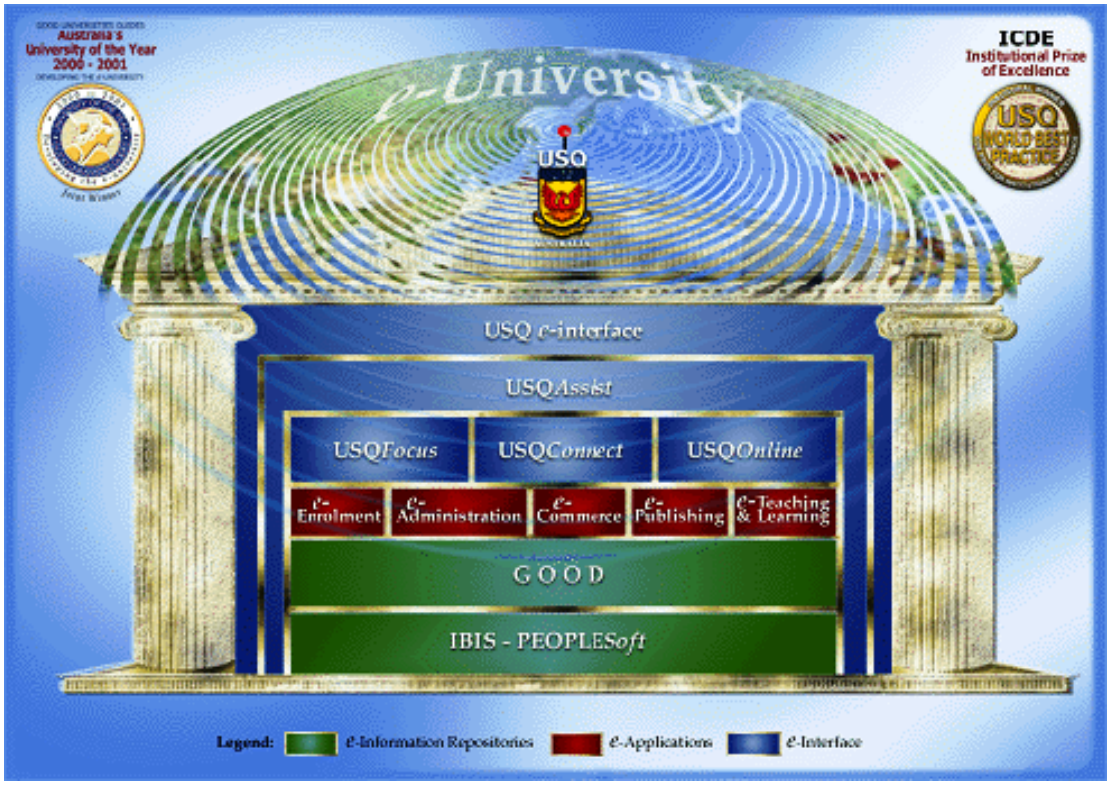


Figure 13: The University of South Queensland portal entry page

It is no surprising that the University of South Queensland has a strong dedication to information technology and has established itself as a leader in managing its on-line digital resources. Its e-University strategic project has been initiated in 2001 and is now in full operation. It addresses various aspects of university administration like e-Enrollment, e-Administration, e-Commerce, e-Publishing, e-Library and e-Teaching and Learning. The so called “e-Temple” project has resulted in the USQ portal shown in figure 13.[26]

Chapter 5: Proposed Plan for adoption of e-University at the University of Cyprus

The University of Cyprus has attempted an initial formulation of its e-University strategy objective with several announcements, presentation sessions, internal interviews, surveys, discussions and idea-submission calls. The objectives of the initiative are expressed in the e-University consultancy report prepared by IBM Cyprus and are to:[27]

- *Facilitate and promote collaboration, knowledge sharing, learning and teamwork thus promoting academic excellence and performance*

- *Assist the institution to accelerate achievement of its already defined and shared Vision, Mission and Goals through the introduction and use of 21st century collaboration and knowledge sharing techniques and practices.*

The University of Cyprus has also taken very serious steps in adopting a new strategy that will lead to a comprehensive review of its business processes. Such steps are:

- adopted a vision towards creating an institution of excellence and communicated this vision to its community

- adopted a concrete objective to proceed towards an establishment of an integrated system of service provision, the so called e-university
- has commissioned a consultancy report to IBM Cyprus to produce an overall strategy recommendation and a high level report on how to proceed in adopting the e-university strategy and achieving its objectives
- organized several sessions to communicate the objectives and discuss with the University community the new environment
- has prepared and is about to publish a public tender for the first phase of the project which includes the supply of the most urgent hardware and software systems and related services.

The plan and the action items, outlined in this section, do not replace the steps and initiatives already taken, but aim to supplement these efforts and to identify issues that have not been addressed or identify weaknesses in the already established strategy and propose remedies. It also identifies additional areas of action that the University might consider examining that have not been examined until now. The proposal is separated into six sections that deal with

(i) the expressed vision and strategy,

(ii) the management culture change,

(iii) the organizational culture change,

(iv) information technology management,

(v) process reengineering and managing the changes,

(vi) the University Portal.

It should be noted that this plan is based on the results of the surveys, interviews and discussion sessions that have already taken place as part of the initiative drive.

5.1 Vision, Strategy and Targets

It is clear that the high-level administration of the UCY has committed itself and has placed significant weight behind the strategic adoption and transition to an e-University. Several issues seem to remain that require attention or more emphasis.

- The institutional vision on e-University has not been adequately publicised and only a small group is aware of the sweeping changes that are coming.
- Participation of staff members (even those to be impacted the most) to the presentations and sessions of the e-University initiative was not as widespread as expected. This leads to the phenomenon that many crucial players in the adoption of the new strategy are not aware of the changes that will be coming and therefore unable to contribute. The evolution of “pockets of resistance” from these groups is a possible danger.
- Many participants in the gatherings were not aware that the e-University project involves anything more than creating a new nice web interface to the already operating back end system. Some participants lacked even the most basic notions of what an e-University is.

- Some participants were aware that an e-University includes, primarily, a culture change but were afraid that such a change was not given any significant effort.

Action plan

1) *Establish a permanent e-University office with appropriate staff members that will focus all activity and spearhead the initiatives that need to be undertaken under the project. The office should be considered a permanent establishment in the UCY and will take the role of continuously re-examining the e-university actions.*

2) *The e-University office should, vigorously, publicise the adopted e-university vision, announce its purpose and publicize its targets in yearly bulletins, and hold idea-gathering sessions. The office should also see that constituents embrace the project, formulate answers to possible concerns and combat internal resistance that will be formed from interested parties.*

3) *Staff committees should be established to examine each subproject or administer the projects. Emphasis should be placed in including as many individuals in the committees as possible to allow staff members to see the changes coming but also to formulate the solutions from the inside. An added benefit of this approach is the development of a feeling of "inclusion" among constituents rather than the project being*

seen as another "technicians" project. Discussion among the UCY community should be vigorous, encouraging participation and encompassing all aspects of the project.

4) *Early project wins are very important. Long-term projects with outcomes far in the future usually loose "steam" very fast. A good starting point is to redesign the existing system of static web pages to provide better up to date, relevant and dynamic information that more closely represents the current UCY state. This very easy project can have significant impact on morale due to its high visibility. A significant reworking of the web site can be achieved in as little a time as one month!*

5.2 Management Culture Change

The two most important achievements of a new strategy are the adoption of a new management culture and the adoption of a new UCY community culture. It is not surprising that both of these achievements refer to a "cultural change". Such a change, if correctly established, will represent a permanent leap forward for the entire organization in contrast to technological changes that become obsolete in very short periods of time. Various studies on previous technology integration projects have shown that technology alone cannot produce answers and desirable outcomes in this area. The objectives of the new management culture are summarized as:

- A flexible organization able to operate in an efficient and fast changing environment
- Improvements in the receptiveness of innovation and constant change in the entire management hierarchy.
- The cultivation of an inclusion strategy for all staff members which will mitigate strains that exist among academic and administrative staff members. Participation of all staff members in both the preparation of projects as well as the decision-making procedures is a sign of a healthy and rewarding environment.
- Strategy shifts are not easy. They are long-term projects that need constant attention. The establishment of long-term visibility is a requirement, especially with a system of elected officials as the one used at the UCY.

Action Plan

1) *Unfortunately, the UCY suffers (to some extend) from the civil servant syndrome characterized by deep hierarchy, focused on procedures and decision making at the highest possible level. This model emphasizes stability and predictability, which are not the objectives of a knowledge organization. Careful consideration should be given to shifting the current organizational model to one suited better to a higher educational institution. The network model should be an immediate objective with the adaptive model as a future challenging objective (see Table 1 on page - 18 -).*

2) *Management culture changes should be spearheaded by the top level management team otherwise there is no chance for a successful outcome.*

5.3 Community Culture Change

The current model being used by the UCY to manage its administrative services does not help in establishing an environment of excellence. Due to historical reasons, the model is based on the civil servant model being used by the government. It is largely based on the "bureaucratic model" with deep hierarchies and inflexible procedures described above and presented in section 1.3 What is the Vision behind the e-University?) and Table 1 on page -18 -. This model is highly inappropriate for an innovative university institution that requires constant change and adaptation to new ideas.

There is a well-established culture clash between administrative and academic staff. Such a clash disorients organizations and does not allow the adoption of common strategies and objectives. It is imperative that vigorous efforts are made to bridge the gap among these UCY groups.

Action plan

1) *Cultural change comes from the top of the organization with objectives that are communicated directly and with all sincerity to every person in the business. Develop and communicate such objectives.*

2) *Adopt a culture of openness, collaboration, inclusion, participation and fairness among ALL staff members. These attributes should encompass the organization from beginning to end. Favoritism breeds antagonization that kills innovation and organizational efficiency.*
3) *All members of staff (academic and administrative), even students, should be considered potential source of innovative ideas. Input should be encouraged from everyone in an open participatory setting.*

4) *Objectives should be agreed among all that are affected from the very beginning. Everyone should be given a chance to participate in creating the objectives of new projects as well as take part in the evaluation of on-going projects and their targets.*

5) *Establish information dissemination and gathering system. The system should be genuine and thorough. No information relevant to the projects should be withheld. A web-based system gives maximum exposure.*

6) *Adopt an incremental change methodology towards, initially, the network organizational model. Publicize this intended shift, explain the changes and pay serious attention to concerns that will be raised.*

7) *Establish a system of learning. Teams should examine "what went right and what went wrong" in each project and transmit the results to the rest of the staff.*

8) *Place emphasis on quality and reward it. Devise methods and procedures to measure quality for each project or sector.*

5.4 Attention to Information Technology

The role of information technology services in the effective adoption and use of the e-University strategy is crucial. A large component of the strategy calls for establishment or enhancement of the technical infrastructure that will enable the necessary information systems to function properly and function as the enabler of the e-University strategy. IT services must be on the forefront of innovation and play the role of the educator for less technically oriented faculties and service departments. As already indicated the university environment is a unique environment where goals and means are dictated to a large extend by the departmental units.

Action plan

1) *The UCY should consider a change in organizational structure for its IT services from a flat hierarchy to a more matrix model structure. Such a model is more suitable in the academia where the academic department enjoys independence, but at the same time, the organization needs a coherent IT strategy and for some enterprise wide systems like financial and student services, an integrated environment. Such a model should also end the never-ending debate of centralization vs. decentralization, which has been going on for a*

while. This model will also flatten the support hierarchy for all the UCY units and place the responsibility and flexibility on the departments for their IT operations. The matrix model is still applicable for departments that do not wish or cannot take full control of their IT services since in such cases the management of the respective IT resources will fall on the central organization.

2) *IT services should spearhead the rest of the UCY in shifting from the procedural model of management being used right now to at least the network model, as explained, and place decision making on the departmental units and their respective support structures.*

3) *IT services should initiate the new management style described above by practically embracing policies of inclusion and discussion. Because of the necessity to create an environment where staff feels that this project is actually about everybody, failure to do so will certainly create resistance to changes with very serious effects on the outcome of the project. Discussion groups with open-ended agendas on particular projects should be formed.*

5.5 Process Reengineering

The UCY realized very early during the e-University project that the established processes and procedures need serious restructuring if the e-University project will be effective. The upcoming tender call for proposals

includes a call for the formal analysis of the UCY processes with the aim of their restructuring.

Action plan

1) *Process reengineering efforts should be an integral part of the e-University projects. The teams set-up to discuss the implementation of each project should also consider what necessary process changes are required to make each project section work most efficiently.*

2) *Participation of those affected is required in order to make sure that there is knowledge transfer from the currently functioning system.*

3) *The new process structure should be built into the new Portal system in simple intuitive steps quite possibly based on templates.*

4) *New policies should emphasize simplicity rather than excessive controls, eliminate the high cost of bureaucracy and delegate authority and responsibility at the most appropriate level where knowledge exists.*

.

5.6 Managing the Changes – Making sure the Strategy is followed

The e-University project is a long-term undertaking. Long-term projects have a high risk of degenerating or sidetracking. The expected inside strong resistance adds further difficulties in achieving the strategic goals. Persistent

and meticulous planning and people management should be built into the project management processes.

Action plan

1) *Establish a high-level committee that will play the role of the champion for the project.*

2) *The e-University leadership committee should*
    a. *undertake to provide the policy and the project working framework and see that everybody follows through to what has been agreed*
    b. *secure funding*
    c. *resolve any issues that cannot be resolved at the lower levels*

3) *Establish an e-University task force that will*
    a. *advertise goals and projects, offering the chance for others to participate though groups and discussions*
    b. *oversee the e-University permanent office and the projects and subprojects it undertakes*
    c. *establish working committees (for example e-teaching/e-learning, e-infrastructure, e-business, e-research, e-community)*
    d. *establish individual project teams*
    e. *Oversee and coordinate committees to make sure that the overall strategy is followed*

5) *Build performance metrics and control mechanism in each project that will examine and refocus, where necessary, the project.*

6) *Educate staff on the aspects of each project and its objectives.*

5.7 The University Portal, the technical component of e-University

A significant part of the e-University project involves installation or enhancement of information technology systems on which the e-University services will be based. As already indicated the adoption of the e-university strategy uses the IT infrastructure to enable the implementation of the necessary procedures and functionality. An overview of what the technical part of the e-University includes is provided in *Appendix D - The Technical part of an e-University project*. This technical overview complements and explains the infrastructure necessary to implement the e-University project.

Action plan

1. *Migrate the current obsolete system of web pages to a portal model that is based on database-driven environment able to deliver consistent and relevant information from various sources.*

2. *Examine portal models, especially those developed by other universities, like the uPortal framework. Adoption of such framework should be easy and highly relevant to the UCY*

environment and will quickly help to develop an institutional portal template.

Chapter 6: Conclusions

Even after its establishment, the e-University strategy will need constant care and rework to take advantage of future changes in the technical and management fields but also to realign the strategy with internal changes that will happen in the organization. The adoption of a culture of excellence will, hopefully, become integrated into the UCY community. Such integration will establish an e-University strategy as a life-long commitment above temporary adoption of any technical solution. Only thus, will the benefits exceed the costs of the undertaking and the vision of a new era will become a reality.

6.1 The Benefits and the Costs

On studies undertaken in the commercial sector where e-Commerce methodologies were established it was found that the adoption of e-commerce strategies has produced approximately the following results:[28]

- Up to 42% increase in revenue
- Up to 35% decrease in the cost of sales
- Up to 80% decrease in order errors
- Up to 25% reduction in the length of the sales cycle
- Up to 2% increase in margins
- Up to 20% increase in customer satisfaction ratings

It is obvious that the benefits are substantial. In the higher education sector these benefits can be broadly translated into

- Reduction in the cost of operations (students services, administration, clerical, financial, faculties etc)
- Improved efficiency in administering the entire organization
- Improved customer service by faster and more accurate procedures
- Improved customer satisfaction by the provision of customer self service techniques, one stop service and service provision from anywhere
- Additional capabilities, previously not possible, like the e-Learning infrastructure, openness to customers both in and outside the organization.

6.2 Cultivating excellence – Fostering innovation

The cultivation of excellence in an organization can be enhanced by collaborating on projects with other institutions and organizations that have shown a pioneering spirit and successful outcomes in the field. Unfortunately, in the European Union, the UCY's natural research partner, there are very few research organizations focusing on e-Strategy initiatives. One such organization is the European University Information Systems Organization (EUNIS)[29] that aims to bring together information systems providers in higher education in formulating a best practices framework. About eighteen countries participate in this organization (Cyprus is not one of them). Participation in such an organization can only benefit Cypriot organizations given that most other European countries are ahead of Cyprus in information technology. The University of Cyprus should take the initiative and bring EUNIS to Cyprus.

On the global scale, several United States institutions and organizations have as their aim the enhancement of the administration of higher education institutions, mainly, by using information technology. These institutions are on the leading edge of both technology and practices. One such institution is EDUCAUSE[30] which is at the forefront of technological advances in the field of managing higher education institutions. EDUCAUSE has a long history of innovation and is led by groups of people that have been, literally, "writing the book" on the use of information technology in higher education. EUNIS is cooperating with EDUCAUSE at various levels.

The JA-SIG[31] group has been formed by pioneering universities and colleges in the US and is sponsored by Sun Microsystems Inc. JA-SIG aims at developing frameworks and software that will allow universities to better organize their administration functions. Their efforts have produced the uPortal software system and application framework that allows each institution to easily install, customize and operate a complete e-university portal. The University of Cyprus should seek involvement in such organizations for research purposes but also for practical reasons.

6.3 The exciting future ahead

The accession of Cyprus to the European Union has (and will more in the future) changed dramatically the Cypriot educational environment. These changes are more intense in the higher education sector. Gone are the days of isolation and protection. Students can now travel anywhere in the Union and receive education with the financial burden substantially reduced from

what used to be. Competition is intensifying also among institutions in Cyprus as well with the establishment of new universities or the advancement of the two and three year colleges to full university status or the entry of foreign institutions in the Cyprus educational market.

A very challenging, but rewarding, future lies ahead if the University of Cyprus is to realize its goal of an innovative educational institution. An e-University strategy will allow the UCY to compete effectively in a pan-European setting. It will also establish the UCY as a center of excellence and model organization for the Cypriot environment. Several years of hard work are required to establish this model organization and the challenge has already begun.

Appendix A - The University Portal Survey

This survey was conducted as part of the commissioned study assigned to IBM Cyprus as an external consultant of the University to evaluate the University's current status and provide a high level insight to adopting a the new e-University strategy. The survey was separated into two parts: (1) Portal Priorities Survey for Staff (shown in section 2) and Portal Priorities Survey for Students (section 3). It was designed primarily to discover what the staff and students believe are the most important features and functions they would like to see on an electronic "portal". While this does not entirely indicate the necessity for adoption of an overarching strategy it is simple enough and easily understandable for anyone to answer.

The questionnaires were accompanied with a "Call for participation" (Section 1 below) to a randomly selected group of the academic staff who were called to both take part in the survey but also to encourage their students to take part. The survey was also randomly distributed to administrative staff.

The results of the survey are shown in section 4 below.

Section 1: Call for participation

13, December 2004

To: _____

Dear Colleague

The continuous improvement of the University's services is of vital importance to all of us. One of the next steps to be taken as part of the University's IT strategy is the development

of a University Portal. A University Portal is a one-stop client-oriented web site that personalizes the portal's tools and information to the specific needs and characteristics of the person visiting the site, using information from university databases.

Attached to this letter, you will find a survey, developed by members of the Computer Science Department and IBM, which asks you to rate your priorities, as far as the new University Portal is concerned. Your response is very important and will help us identify your needs and priorities, in order to best develop the Portal.

Similarly, a survey has been developed for students, to identify their needs. Therefore, you will also find a pack of 50 such forms (an estimated number of students per class), which will have to be given to your students for completion. As we need these forms as soon as possible, it would be best if you asked your students to complete these after the completion of their final exam _____.

A specific percentage of faculty and student responses are required to obtain a clear and representative view of faculty and student needs. As part of this process, you and your students were selected randomly to participate in this survey. Please note that the survey data is completely anonymous. Names are not linked to individual questionnaires.

Please return all survey forms to xxxxx (Tel: xxxx), Computer Science Department, before the 24th December 2004. Thank you in advance for your time and participation.

Sincerely,

Dr. Paraskevas Evripidou,

Associate Professor and

Chair of the Computer Science Department

A.1 Portal Priorities Survey Questions for Staff

This is a survey for gathering staff priorities, as far as the University of Cyprus Portal is concerned. A university portal is a one-stop client-oriented web site that personalizes the portal's tools and information to the specific needs and characteristics of the person visiting the site, using information from university databases.

Please answer the following questions by placing a tick (√) in the appropriate cell

Administration	***Not applicable***	***Not important***	***Low priority***	***Important***	***Very important***
Check the availability of rooms and make room bookings					
View your university salary statement details					
View/update your (university) annual leave record					
Submit orders and pay invoices					
Teaching and learning information	***Not applicable***	***Not important***	***Low priority***	***Important***	***Very important***
Access/update teaching/learning materials for your course/modules					
Access/update reading lists					
Access course timetables					
Access exam timetables					
Enter grades for exams or coursework					
View all the grades for your course/modules					
Receive coursework					
Research Resources	***Not applicable***	***Not important***	***Low priority***	***Important***	***Very important***
View funding opportunities					
View project latest financial information					
Request Cost Statement					
Request Issue of Payment (within a project)					
Ability to view/ add to the University Publication database					
Personalization Services	***Not applicable***	***Not important***	***Low priority***	***Important***	***Very important***
Receive personalized announcements (e.g. relevant conferences)					
Receive alerts for staff development events					
Receive information about jobs available within the university					
Ability to change the look and feel of your portal screen					
Ability to control what information is displayed in your portal screen displayed and where it appears					
Library (and other) resources	***Not applicable***	***Not important***	***Low priority***	***Important***	***Very important***
Check your library account (view reservations/books on loan etc)					
Renew library books					
Search the library catalogue					
Pay library fines online					

Reserve an item					
Search your favourite library e-resources or web sites					
Perform an internet search - using the Google search engine or similar					
Search university web pages					
Communicating	***Not applicable***	***Not important***	***Low priority***	***Important***	***Very important***
Send instant messages to friends or colleagues					
Access discussion boards for your courses/modules					
Access general discussion boards					
Access institutional calendar - keep track of university events					
Access personal calendar					
Access shared calendars - keep track of other staff and/or departmental events					
Have the option to integrate other calendars in your personal calendar					
Access university email account					
Conduct an online survey of students/staff					
News and information	***Not applicable***	***Not important***	***Low priority***	***Important***	***Very important***
Access university related news and information about university events					
Access weather forecasts					
Have national news delivered/accessible					
Access information about university/departmental social events					
Access official forms, policies, other documentation					
Access course/department/university handbook					
Access up-to-date telephone/email directory for university staff					
Access campus maps/directions					

Please write below any comments you may have regarding features you would particularly like to see in the UCY Portal.

_____
_____
_____
_____

_____

Thank you for your participation!

A.2 Portal Priorities Survey Questions for Students

This is a survey for gathering students' priorities, as far as the University of Cyprus Portal is concerned. A university portal is a one-stop client-oriented web site that personalizes the portal's tools and information to the specific needs and characteristics of the person visiting the site, using information from university databases.

Please answer the following questions by placing a tick (√) in the appropriate cell

Administration	***Not applicable***	***Not important***	***Low priority***	***Important***	***Very important***
Select the courses you want to take and register online					
Review the courses you are taking and change them if you need to					
Pay fees for tuition online					
Change your personal details, e.g. address, email etc.					
Teaching and learning information	***Not applicable***	***Not important***	***Low priority***	***Important***	***Very important***
Access teaching/learning materials for your course/modules					
Access reading lists					
Access course timetables					
Access exam timetables					
View all the grades for your courses					
Submit coursework					
View information about further study (postgraduate) possibilities					
Personalization	***Not applicable***	***Not important***	***Low priority***	***Important***	***Very important***
Receive an alert when a coursework deadline is approaching					
Ability to change the look and feel of your portal screen					
Ability to control what information is displayed in your portal screen displayed and where it appears					
Library (and other) resources	***Not applicable***	***Not important***	***Low priority***	***Important***	***Very important***
Check your library account (view reservations/books on loan etc)					
Renew library books					
Search the library catalogue					
Pay library fines					
Reserve an item					
Search your favourite library e-resources or web sites					
Perform an internet search - using the Google search engine or similar					
Search university web pages					

Communicating	***Not applicable***	***Not important***	***Low priority***	***Important***	***Very important***
Send instant messages to friends or colleagues					
Access discussion boards for your course/modules					
Access general discussion boards					
Access institutional calendar - keep track of university events					
Access personal calendar					
Access shared calendars - keep track of department/school events					
Access shared calendars - keep track of social/sports societies events					
Have the option to integrate other calendars in your personal calendar					
Access university email account					
Take part in an online survey					
Vote in student elections					
News and information	***Not applicable***	***Not important***	***Low priority***	***Important***	***Very important***
Access university related news and information about university events					
Have local or national news delivered/accessible					
Access official forms, policies, other documentation					
Access course/department/university handbook					
Access up-to-date telephone/email directory for university staff					
Access campus maps/directions					

Please write below any comments you may have regarding features you would particularly like to see in the UCY Portal.

Thank you for your participation!

A.3 Detailed survey result: Staff

Answers\ Questions	1	2	3	4	5	Audience	Total participants
Question 1	**Check the availability of rooms and make room bookings**						
			6	2	3	Academic	
	2	2	2	4	1	Administrative	
SUMS	2	2	8	6	4		22
	9%	**9%**	**36%**	**27%**	**18%**		
Question 2	**View your university salary statement details**						
		2	6	1	2	acad.	
		1	4	5	1	Administrative	
SUMS	0	3	10	6	3		22
	0%	**14%**	**45%**	**27%**	**14%**		
Question 3	**View/update your (university) annual leave record**						
		3	4	4		acad.	
	1	2	1	4	3	Administrative	
SUMS	1	5	5	8	3		22
	5%	**23%**	**23%**	**36%**	**14%**		
Question 4	**Submit orders and pay invoices**						
		3	3	3	2	Academic	
	3		4	2	2	Administrative	
SUMS	3	3	7	5	4		22
	14%	**14%**	**32%**	**23%**	**18%**		
Question 5	**Access/update teaching/learning materials for your course/modules**						
			1	3	7	Academic	
	5	2		2	2	Administrative	
SUMS	5	2	1	5	9		22
	23%	**9%**	**5%**	**23%**	**41%**		
Question 6	**Access/update reading lists**						
				6	5	Academic	
	5			4	1	Administrative	
SUMS	5	0	0	10	6		21
	24%	**0%**	**0%**	**48%**	**29%**		
Question 7	**Access course timetables**						
		1		8	2	Academic	
	5		1	4		Administrative	
SUMS	5	1	1	12	2		21
	24%	**5%**	**5%**	**57%**	**10%**		
Question 8	**Access exam timetables**						
		1		5	5	Academic	
	5	1	1	3	4	Administrative	
SUMS	5	2	1	8	9		25
	20%	**8%**	**4%**	**32%**	**36%**		
Question 9	**Enter grades for exams or coursework**						
				4	7	Academic	
	6	1		3	2	Administrative	
SUMS	6	1	0	7	9		23
	26%	**4%**	**0%**	**30%**	**39%**		
Question 10	**View all the grades for your course/modules**						
				5	6	Academic	
	6			3	2	Administrative	

SUMS	6	0	0	8	8		22
	27%	**0%**	**0%**	**36%**	**36%**		
Question 11	**Receive coursework**						
		1	2	5	3	Academic	
	6	1	2		1	Administrative	
SUMS	6	2	4	5	4		21
	29%	**10%**	**19%**	**24%**	**19%**		
Question 12	**View funding opportunities**						
				2	9	Academic	
	7	1		2	1	Administrative	
SUMS	7	1	0	4	10		22
	32%	**5%**	**0%**	**18%**	**45%**		
Question 13	**View project latest financial information**						
	1			2	8	Academic	
	7		1		3	Administrative	
SUMS	8	0	1	2	11		22
	36%	**0%**	**5%**	**9%**	**50%**		
Question 14	**Request Cost Statement**						
	1			4	6	Academic	
	7		1		3	Administrative	
SUMS	8	0	1	4	9		22
	36%	**0%**	**5%**	**18%**	**41%**		
Question 15	**Request Issue of Payment (within a project)**						
	1			4	6	Academic	
	7		2	1	2	Administrative	
SUMS	8	0	2	5	8		23
	35%	**0%**	**9%**	**22%**	**35%**		
Question 16	**Ability to view/ add to the University Publication database**						
				5	5	Academic	
	3	1	4	1	1	Administrative	
SUMS	3	1	4	6	6		20
	15%	**5%**	**20%**	**30%**	**30%**		
Question 17	**Receive personalized announcements (e.g. relevant conferences)**						
		2	5	1	3	Academic	
			4	7		Administrative	
SUMS	0	2	9	8	3		22
	0%	**9%**	**41%**	**36%**	**14%**		
Question 18	**Receive alerts for staff development events**						
	1	2	3	4	1	Academic	
		1	3	6	1	Administrative	
SUMS	1	3	6	10	2		22
	5%	**14%**	**27%**	**45%**	**9%**		
Question 19	**Receive information about jobs available within the university**						
	1	3	2	3	2	Academic	
			2	6	3	Administrative	
SUMS	1	3	4	9	5		22
	5%	**14%**	**18%**	**41%**	**23%**		
Question 20	**Ability to change the look and feel of your portal screen**						
		3	4	4		Academic	
		1	8	1	1	Administrative	
SUMS	0	4	12	5	1		22
	0%	**18%**	**55%**	**23%**	**5%**		
Question 21	**Ability to control what information is displayed in your portal screen displayed and where it appears**						

		4	1	5	1	Academic	
			4	5	2	Administrative	
SUMS	0	4	5	10	3		22
	0%	**18%**	**23%**	**45%**	**14%**		
Question 22	**Check your library account (view reservations/books on loan etc)**						
				3	7	Academic	
	2	1	4	4		Administrative	
SUMS	2	1	4	7	7		21
	10%	**5%**	**19%**	**33%**	**33%**		
Question 23	**Renew library books**						
				1	10	acad.	
	1		3	4	3	Administrative	
SUMS	1	0	3	5	13		22
	5%	**0%**	**14%**	**23%**	**59%**		
Question 24	**Search the library catalogue**						
					11	acad.	
		1	2	6	2	Administrative	
SUMS	0	1	2	6	13		22
	0%	**5%**	**9%**	**27%**	**59%**		
Question 25	Pay library fines online						
				5	5	acad.	
	1		4	3	2	Administrative	
SUMS	1	0	4	8	7		20
	5%	**0%**	**20%**	**40%**	**35%**		
Question 26	Reserve an item						
			1	1	8	Academic	
			3	5	3	Administrative	
SUMS	0	0	4	6	11		21
	0%	**0%**	**19%**	**29%**	**52%**		
Question 27	Search your favourite library e-resources or web sites						
				5	6	Academic	
			3	4	4	Administrative	
SUMS	0	0	3	9	10		22
	0%	**0%**	**14%**	**41%**	**45%**		
Question 28	Perform an internet search - using the Google search engine or similar						
		1	1	2	6	Academic	
			1	7	4	Administrative	
SUMS	0	1	2	9	10		22
	0%	**5%**	**9%**	**41%**	**45%**		
Question 29	**Search university web pages**						
			1	3	6	Academic	
			2	6	3	Administrative	
SUMS	0	0	3	9	9		21
	0%	**0%**	**14%**	**43%**	**43%**		
Question 30	**Send instant messages to friends or colleagues**						
		2	2	5	1	Academic	
			3	5	8	Administrative	
SUMS	0	2	5	10	9		26
	0%	**8%**	**19%**	**38%**	**35%**		
Question 31	**Access discussion boards for your courses/modules**						
			6	2	2	Academic	
	2	3	3	1	1	Administrative	

SUMS	2	3	9	3	3		20
	10%	**15%**	**45%**	**15%**	**15%**		
Question 32	**Access general discussion boards**						
		4	2	3	1	Academic	
	1	2	5	3		Administrative	
SUMS	1	6	7	6	1		21
	5%	**29%**	**33%**	**29%**	**5%**		
Question 33	**Access institutional calendar - keep track of university events**						
			5	4	2	Academic	
		1	4	5	1	Administrative	
SUMS	0	1	9	9	3		22
	0%	**5%**	**41%**	**41%**	**14%**		
Question 34	**Access personal calendar**						
		1	4	3	2	Academic	
		1	3	7		Administrative	
SUMS	0	2	7	10	2		21
	0%	**10%**	**33%**	**48%**	**10%**		
Question 35	**Access shared calendars - keep track of other staff and/or departmental events**						
		2	2	6		Academic	
		2	4	5		Administrative	
SUMS	0	4	6	11	0		21
	0%	**19%**	**29%**	**52%**	**0%**		
Question 36	**Have the option to integrate other calendars in your personal calendar**						
		3	3	4		Academic	
		2	4	4	1	Administrative	
SUMS	0	5	7	8	1		21
	0%	**24%**	**33%**	**38%**	**5%**		
Question 37	**Access university email account**						
		1	3	1	5	Academic	
		1		2	7	Administrative	
SUMS	0	2	3	3	12		20
	0%	**10%**	**15%**	**15%**	**60%**		
Question 38	**Conduct an online survey of students/staff**						
		3		5	2	Academic	
		1	5	2	2	Administrative	
SUMS	0	4	5	7	4		20
	0%	**20%**	**25%**	**35%**	**20%**		
Question 39	**Access university related news and information about university events**						
		1	3	6		Academic	
			1	7	4	Administrative	
SUMS	0	1	4	13	4		22
	0%	**5%**	**18%**	**59%**	**18%**		
Question 40	**Access weather forecasts**						
		3	5	1		Academic	
		4	5	2		Administrative	
SUMS	0	7	10	3	0		20
	0%	**35%**	**50%**	**15%**	**0%**		
Question 41	**Have national news delivered/accessible**						
		2	5	2		Academic	
			4	7		Administrative	
SUMS	0	2	9	9	0		20
	0%	**10%**	**45%**	**45%**	**0%**		

Question 42	**Access information about university/departmental social events**						
		1	4	5		Academic	
			4	7		Administrative	
SUMS	0	1	8	12	0		21
	0%	**5%**	**38%**	**57%**	**0%**		
Question 43	**Access official forms, policies, other documentation**						
			2	5	3	Academic	
		1		6	4	Administrative	
SUMS	0	1	2	11	7		21
	0%	**5%**	**10%**	**52%**	**33%**		
Question 44	**Access course/department/university handbook**						
			2	5	3	Academic	
		1	1	4	5	Administrative	
SUMS	0	1	3	9	8		21
	0%	**5%**	**14%**	**43%**	**38%**		
Question 45	**Access up-to-date telephone/email directory for university staff**						
				4	6	Academic	
		2	1	7		Administrative	
SUMS	0	2	1	11	6		20
	0%	**10%**	**5%**	**55%**	**30%**		
Question 46	**Access campus maps/directions**						
		1	2	4	3	Academic	
			1	8	2	Administrative	
SUMS	0	1	3	12	5		21
	0%	**5%**	**14%**	**57%**	**24%**		

A.4 Detailed Survey Results: Students

Answers\ Questions	1	2	3	4	5	Total participants
Question 1	**Select the courses you want to take and register online**					
SUMS	26	15	57	186	172	456
	6%	**3%**	**13%**	**41%**	**38%**	
Question 2	**Review the courses you are taking and change them if you need to**					
SUMS	12	21	52	183	184	452
	3%	**5%**	**12%**	**40%**	**41%**	
Question 3	**Pay fees for tuition online**					
SUMS	84	76	109	88	53	410
	20%	**19%**	**27%**	**21%**	**13%**	
Question 4	**Change your personal details, e.g. address, email etc**					
SUMS	20	54	88	162	121	445
	4%	**12%**	**20%**	**36%**	**27%**	
Question 5	**Access teaching/learning materials for your course/modules**					
SUMS	9	18	32	156	232	447
	2%	**4%**	**7%**	**35%**	**52%**	
Question 6	**Access reading lists**					
SUMS	6	13	67	164	181	431
	1%	**3%**	**16%**	**38%**	**42%**	
Question 7	**Access course timetables**					
SUMS	7	17	50	158	203	435
	2%	**4%**	**11%**	**36%**	**47%**	
Question 8	**Access exam timetables**					
SUMS	4	13	23	149	246	435
	1%	**3%**	**5%**	**34%**	**57%**	
Question 9	**View all the grades for your courses**					
SUMS	7	9	26	116	273	431
	2%	**2%**	**6%**	**27%**	**63%**	
Question 10	**Submit coursework**					
SUMS	4	19	43	174	180	420
	1%	**5%**	**10%**	**41%**	**43%**	
Question 11	**View information about further study (postgraduate) possibilities**					
SUMS	6	14	68	161	166	415
	1%	**3%**	**16%**	**39%**	**40%**	
Question 12	**Receive an alert when a coursework deadline is approaching**					
SUMS	19	31	82	171	129	432
	4%	**7%**	**19%**	**40%**	**30%**	
Question 13	**Ability to change the look and feel of your portal screen**					
SUMS	9	70	163	113	74	429
	2%	**16%**	**38%**	**26%**	**17%**	

Question 14	**Ability to control what information is displayed in your portal screen displayed and where it appears**					
SUMS	14	45	132	161	73	425
	3%	**11%**	**31%**	**38%**	**17%**	
Question 15	**Check your library account (view reservations/books on loan etc)**					
SUMS	20	29	94	184	119	446
	4%	**7%**	**21%**	**41%**	**27%**	
Question 16	**Renew library books**					
SUMS	13	24	83	177	134	431
	3%	**6%**	**19%**	**41%**	**31%**	
Question 17	**Search the library catalogue**					
SUMS	9	22	63	176	163	433
	2%	**5%**	**15%**	**41%**	**38%**	
Question 18	**Pay library fines**					
SUMS	44	62	119	129	81	435
	10%	**14%**	**27%**	**30%**	**19%**	
Question 19	**Reserve an item**					
SUMS	13	35	91	168	114	421
	3%	**8%**	**22%**	**40%**	**27%**	
Question 20	**Search your favourite library e-resources or web sites**					
SUMS	13	27	82	173	133	428
	3%	**6%**	**19%**	**40%**	**31%**	
Question 21	**Perform an internet search - using the Google search engine or similar**					
SUMS	11	26	74	160	160	431
	3%	**6%**	**17%**	**37%**	**37%**	
Question 22	**Search university web pages**					
SUMS	9	15	58	165	185	432
	2%	**3%**	**13%**	**38%**	**43%**	
Question 23	**Send instant messages to friends or colleagues**					
SUMS	22	32	92	149	122	417
	5%	**8%**	**22%**	**36%**	**29%**	
Question 24	**Access discussion boards for your course/modules**					
SUMS	8	25	99	168	114	414
	2%	**6%**	**24%**	**41%**	**28%**	
Question 25	**Access general discussion boards**					
SUMS	8	31	117	167	82	405
	2%	**8%**	**29%**	**41%**	**20%**	
Question 26	**Access institutional calendar - keep track of university events**					
SUMS	12	31	107	159	95	404
	3%	**8%**	**26%**	**39%**	**24%**	
Question 27	**Access personal calendar**					
SUMS	10	40	97	159	95	401

	2%	**10%**	**24%**	**40%**	**24%**	
Question 28	**Access shared calendars - keep track of department/school events**					
SUMS	14	37	124	158	80	413
	3%	**9%**	**30%**	**38%**	**19%**	
Question 29	**Access shared calendars - keep track of social/sports societies events**					
SUMS	7	59	134	136	75	411
	2%	**14%**	**33%**	**33%**	**18%**	
Question 30	**Have the option to integrate other calendars in your personal calendar**					
SUMS	8	71	134	126	75	414
	2%	**17%**	**32%**	**30%**	**18%**	
Question 31	**Access university email account**					
SUMS	5	24	72	163	140	404
	1%	**6%**	**18%**	**40%**	**35%**	
Question 32	**Take part in an online survey**					
SUMS	14	44	114	139	90	401
	3%	**11%**	**28%**	**35%**	**22%**	
Question 33	**Vote in student elections**					
SUMS	24	26	89	131	142	412
	6%	**6%**	**22%**	**32%**	**34%**	
Question 34	**Access university related news and information about university events**					
SUMS	15	23	85	184	101	408
	4%	**6%**	**21%**	**45%**	**25%**	
Question 35	**Have local or national news delivered/accessible**					
SUMS	8	39	110	158	93	408
	2%	**10%**	**27%**	**39%**	**23%**	
Question 36	**Access official forms, policies, other documentation**					
SUMS	17	25	101	169	93	405
	4%	**6%**	**25%**	**42%**	**23%**	
Question 37	**Access course/department/university handbook**					
SUMS	7	22	76	180	116	401
	2%	**5%**	**19%**	**45%**	**29%**	
Question 38	**Access up-to-date telephone/email directory for university staff**					
SUMS	14	29	64	171	131	409
	3%	**7%**	**16%**	**42%**	**32%**	
Question 39	**Access campus maps/directions**					
SUMS	11	38	89	147	108	393
	3%	**10%**	**23%**	**37%**	**27%**	

Appendix B - The e-University administrative interviews

Appendix B contains the recorded results of the interviews conducted with several individuals holding key positions in the administrative structure of the University of Cyprus. Each entry below indicates the position of the individual that has been interviewed (names have been erased but are available), a brief description of the functions the current position needs with respect to information processing and the conclusions drawn from the interview.

It is worthwhile to note that each interview was an open-ended discussion style interview rather than a questions answers session even though prepared questions were used to guide the discussions.

B.1 Name / Position: ……
Internal Auditor

Description:

Internal auditor monitors that internal processes are correctly executed.

Currently connects to Accounting and Payroll System via a modem for security (no direct secure connection exists with University systems). Connection by modem is slow.

If information is needed from other services, then it is manually requested from the corresponding department (e.g, HR, Invoicing, Stock Controls, Fixed Assets, etc).

Direct Needs:

- Like to connect to other University systems (e.g., HR and Invoicing, Fixed Assets Register, Stock Controls, etc) but security and speed seems to be an issue.

Conclusions drawn from the analysis: (*may include observations drawn from other interviews and/or documentation, please indicate if you agree/disagree and comment where you feel necessary*)

- The internal auditor needs to have access to all Financial and Administration University systems to ensure that processes are followed and that financial records are correctly maintained. This means that the internal auditor needs to have fast and secure access to all major University systems (including HR, Invoicing, Payroll, Fixed Asset Register, Stock Control, Budgets, etc.)

B.2 Name / Position: ....

Payroll Staff

Payroll Types:

The following payroll categories are present in the University:

- Management
  - Permanent
  - On-contract
  - Short Term Employment
- Academic
  - Permanent
  - On-contract
  - Short Term Employment
- Pensioners
- Hourly paid employees
  - On-contract
  - Short Term Employment

Payroll Processes/Areas:

Payroll must handle various types of collective agreements that include complex rules depending on the status of the employee.

The Accounting and Financials department is responsible for providing employee gross earnings (Basic Salary, COLA, Allowances, Overtimes, 13th Salary etc.), employee deductions (Social Insurance, Income Tax, Provident and Medical fund schemes etc.) and employer contributions (Social Insurance, HRD Fund, Redundancy Fund, Accruals etc.) per payroll period based on the data they have and HR authorization.

A significant amount of workload is also required for the extensive retroactive payments that are present in most of the collective agreements and most of them are done manually.

Supporting IT system:

The Payroll main system is the Noasis program by CyCom. The system was customized to include more functionality during May 2004. The system is capable of performing part of the payroll process and is not linked with the HR system or other University systems.

Conclusions drawn from the analysis: (*may include observations drawn from other interviews and/or documentation, please indicate if you agree/disagree and comment where you feel necessary*)

- A clear distinction should be made between historical employee master data and payroll computed data. This will eliminate the effort of retroactive accounting.
- The HR system is must be integrated or at least linked with Payroll one. This will minimize the maintenance of employee data and eliminate double entries.
- The distinction of employee master data from computed data will allow the development of algorithms and rules gathering the various employee/employer earnings, deduction and contributions automating the generation of net pay.

- Postings of employee payroll results to financials is better to be automated and directly linked with payroll results taking into concern the various retroactive runs.
- HR department is better to have greater interference with payroll process since is the one who authorize the various changes.

B.3 Name / Position: ……

Head of Personnel

Employment Types:

The following employee categories are present in the University:

- Management
- Academic
- Educational Specialist
- Post degree Coworkers
- Special Scientists
- New Researches
- Short Time Employees
- On-Contract
- On Collective Agreements
- Pensioners

HR Processes/Areas:

Organizational Management/Structure

The University has a solid organizational structure with departments, job descriptions and positions which is approved by the government through budget.

Personnel Administration

The University is required to keep a significant amount of employee data. This includes general employee data (personal data, addresses, bank details, family related data etc.) and employee contract data (various types of contracts per employee type) along with their corresponding historical changes.

Employee Self Service

Currently there is no such facility but there is a need of it.

Time Management

Due to the large variety of contracts and collective agreements employee time data is very important and a significant amount of workload is required. Absences (sick leaves, maternity, military, sabbatical etc), Overtimes, attendances are some of the data that is required.

Recruitment

Recruitment procedure is partially outsourced performed with the help of SHL Greece.

Training and Events

This process is currently under investigation.

Personnel Development

SHL is also assisting the HR department in the area of personnel development basically for employee evaluations applying various appraisal schemes.

Payroll

HR department does not perform any payroll process.

Supporting IT system:

The human resources main system is the HRM program by LogicDis (v2.7) with an Oracle database. The system currently has approximately 1000 users. The system is capable of generating flexible reports, which is very useful for the HR.

HR users access the system via a dedicated client (not web-enabled) and can view information based on their profile. Users cannot update information.

The system is not connected to other University systems (e.g., Payroll) and communication is done manually. However, system does have the capability to connect to payroll systems (this is a requirement on the RFP for Financials).

Other systems include a recruitment system (SHL) and a system for personal development (360 appraisal).

Conclusions drawn from the analysis: (*may include observations drawn from other interviews and/or documentation, please indicate if you agree/disagree and comment where you feel necessary*)

- Multiple employee data is maintained in more than one places. An integrated system (client – server) will be a solution to this with authorizations and workflow facility.
- Organizational structure must be linked with employee master data and enable HR users to maintain data historically.
- HRM meets only the basic needs of the HR department, however it lacks a connection to other systems (such as financials) and lots of paperwork is still needed. System should be web-enabled and open to all parties involved (HR personnel, internal auditor, employees) and communicate with other systems electronically.
- Replace paper communication with payroll throw a workflow procedure in integrated system.
- Time Management must be also linked with employee master data and payroll in order to perform university requirements with minimal maintenance effort.
- Personnel Development and Training and Events areas can be investigated together with a direct link on the Organizational structure. Skills and qualifications should be coded and weighted, linked to jobs or positions. This will align Recruitment process with personnel development and Training and Events process by introducing various features such as applicant pool, screening, career path etc.
- An integrated and web-enabled system will allow the use of Employee Self Service and Workflow processes.

B.4 Name / Position: …….
Library Director

Description:
Library has a development plan that takes into account: University Vision, Current situation of library, International trends of libraries. Administration of the library was computerized since the beginning. Library supports several kinds of material e.g. printed, microforms, video, music disks, cassettes and CDs and digital material (hybrid library).

IT system (ADVANCED GEAC) supports orders, received, accounting (purchases and reports), cataloging, search and retrieval, journal issues monitoring and claims, and web access, reservations. System is not connected to other University systems (e.g., student accounts or financials). Data are manually synchronized at fixed intervals (data are duplicated).

Library, through HEAL-Link consortium, provides access to a number of digital libraries (e-journals and databases). Also, a number of databases have been installed locally in the library and are accessible through the campus network. Access to these libraries is restricted to campus only IP address (e.g., on-campus computers and University dialup). Each publisher provides each own content and each own GUI (front-end). Library need/plans to provide integrated search capabilities for all digital sources.

Library issues cards that can be used for borrowing, photocopying, parking, and other activities.

Library contacts the faculty members to promote / advertise new capabilities (e.g., new books) via focused e-mails per Department, at regular intervals (bimonthly) and via the web pages, paper notices are additionally sent to the chairpersons, the secretaries and the library liaison academic staff of each department.

Direct Needs:
- Better interoperability with other services, integration of services and resources.
- Provide personalization capabilities for users. Also provide support in IT tools for users.
- Obtain subject/domain experts for recommendations and help users in finding material.
- Create tools to integrate existing resources.

Conclusions drawn from the analysis: (*may include observations drawn from other interviews and/or documentation, please indicate if you agree/disagree and comment where you feel necessary*)
- Library IT system meets most of the needs of the library. However it is isolated from other University systems and as a result a lot of manual/paper work is also needed (e.g. Students Service, Accountant Services).
- Library web site provides access to digital content and catalog for physical material. However, access is not universal due to security concerns (e.g., publishers restrictions in accessing licensed material from non-University users). A VPN solution could allow university users to access the material from any locations (e.g., even outside Cyprus) and from any connection (e.g., besides dialup).
- Library web site needs improvements to include a more user-friendly design and provide personalization features to end-users (e.g., each user gets a customized view of the library).
- Library can use the web-site and other means to reach to the community (e.g., a dedicated section on the main University web-site that will host library news, an email list, etc.)
- Need eLearning modules to complement the in-person training on library tools.

B.5 Name / Position: …….

Head of Academic Affairs and Student Welfare

Description:

Service handles all aspects of student life (from academic, housing, social and psychological support, athletics, career, etc.).

One major process is student registration, which is not automated but includes manual intervention. Student registration is a painful process both for students and for personnel and needs ways to improve in terms of efficiency.

The entering of the student application to Banner is done manually by internal personnel.

Main IT system is Banner (v4.x with an Oracle database) which meets the needs for admissions, registration, grades, graduation, and reports. Banner is used in a closed circuit for security reasons. Banner does not have connection to other University systems (e.g., Financials).

This service also issues several paper documents/certificates for students (e.g., transcripts). Timing is sometimes critical (e.g., issue grades in time for graduation or issue degree for submission to government by students).

Another process of this service is the allocation / booking of classrooms. The booking is currently done manually.

Service provides housing to students (both on campus and at local apartments). Housing is not currently supported by an IT system. Maintenance of the housing building is handled by technical services. Students report housing problems to technical services through an onsite secretary.

Students have a good representation in University affairs.

Direct Needs:

- Web-based registration for students. Train personnel on new platform.
- Web access
- A more dynamic web-site with more information.
- Create a databank for student career.
- Use IT in 'Housing' (eg. Banner module)
- Improve the way of helping students and provide information (eg. Via a call center)

Conclusions drawn from the analysis: (*may include observations drawn from other interviews and/or documentation, please indicate if you agree/disagree and comment where you feel necessary*)

- Create a more dynamic and personalized web-site for students that will provide updated information on all services provided (e.g., housing, career, social and psychological support, athletics). Also, create a database with employment opportunities for students.
- Web-enable existing software system (i.e., Banner) to allow web-based:
    - Registration to courses.
    - Access to academic records and personal information by students.
    - Access to personal information and student academic records by academic personnel
    - Access to course catalog, syllabus, and student personal/academic information by the departments.

    - Student applications (For Graduate Level Students. Also for transfer Undergraduate Level Students)
    - Student admissions (Mainly for Graduate Level Students)
- Admissions: All application for graduate programs will be run by the graduate office, instead of the secretaries of the departments. Also all the applications for transfer at the undergraduate level will be done by the web module instead of a manual process.
- Implement CAPP (Curriculum Advisor Program Process) which will enable advisor to monitor the student progress. This will be implemented only with the direct involvement/responsibility of the departments.
- Extend the capabilities of Banner to include support for other services (e.g., housing, career development, etc.) and connect Banner to other University services (e.g., Financials and Library to avoid duplication of data and provide new capabilities)
- Create a call center to improve communication and availability of information regarding this service. Also achieve a better utilization of the staff in replying to requests for information.

B.6 Name / Position: **Postgraduate Students**

A/A	Interview Responses to Questions
1	**Registration**
	• Easier to register on-line especially because some of them work but they too believe that it is not such a good idea because they cannot negotiate!! Maybe can do both. Required modules can be booked online. • Priority issue very important (alphabetical order not so fair method).
2	**Teaching**
	• They use computer daily for presentations, e-mails, etc. • Communication with their lecturers is done through university e-mail. • They find it user-friendly (prefer to use it through Outlook). • They have access to Library database from home as well. Some of them did not know that. • Very important to receive lecture notes before the actual lecture. • Web City (learning platform) is very user-friendly.
3	**Interaction with the Administration**
	• On-line applications for standard documents/reports is a necessity. • Information on what the 'Academic Affairs & Student Welfare' Department offers. • Need to be able to view on-line the announcements from the different University Societies
4	**Research/ Communication with Other Students or Associates**
	• Use it to communicate with other students/ associates. • A shared Directory would be very useful for PhD Students. • Another suggestion was the availability of on-line Lectures/ Links from other Universities abroad.
5	**Other Needs**
	• Have only one code for entering all systems. • The project to be implemented with the aid of the University IT department. • Communicate to students that it is a requirement to complete certain procedures by using a PC, otherwise they will not use it.

B.7 Name / Position: Undergraduate Students

A/A	Interview Responses to Questions
1	**Registration**
	• Major Problem: They do believe on-line registration is not a good idea because is done on a first-come first-served basis which means that a student might for example not manage to finish his/her degree due to a module that never managed to register for. • On the other hand, not very happy with the current system as well because have to wait for all those preceding you to register until you register yourself.
2	**Teaching**
	• Would like Lecturers to use computer technology more. It is less costly as well since today they have to buy all the material from the copy center. If they had all lecture notes, syllabus information etc. online; they could just print it out. • Grant for a portable computer could initiate students to buy their own PC. • University e-mail a/c not used (not user-friendly). Lecturers use whichever the students give them, which most of the times is the private account. • Need motives to use the internet more i.e. when marks were put on the Internet the number of students using the internet increased. Same could be done with the class schedules. Access to information when university is closed is also very important. • A lot of students do not even know they have access to the Library database. Thought would be very useful if the could enter this database from the computer at home with a password/username. Also, the presentation at the beginning of the semester for the library considered to be very boring. • They only enter a website when they are asked to. • Programmed downloaded on their PCs are copies to the originals. • The PCs available are not enough especially at periods when they have assignments to hand-in. Closing times are not convenient too (20:30).
3	**Interaction with the Administration**
	• Different Standard Reports/ Documents needed. Today, it takes 1 week to get it and students have to physically go to the 'Academic Affairs and Students Welfare' Department. • Information about ERASMUS should be available online without having to go to the 'Academic Affairs and Students Welfare' Department.
4	**Interaction with Other Students**
	• Use msn to interact with each other. Do not use e-mail that often too because they can easily meet with each other. • Non-Computing oriented departments offer a required module on Computers but it is not practical at all. They consider theories on Computing to be very un-useful.
5	**Other Needs**
	• Lecture notes to be sent by e-mail beforehand. This makes it easier for them to take notes. • In more theoretical Degrees, an estimate was given that out of 40 modules taught, only 4 needed computer/ internet support. • Reluctance to computer technology is more evident between Lecturers than between students.

B.8 Name / Position: …….

Head of Financial Services

Description:

The Financial Services major activities are:

- Accounting
- Payroll
- Proposal Management
- Research Programs Financial Management
- Material Management and Stock Control

Currently, the communication with some software systems outside the department is done by paper.

Three main problems have been identified:

- Stock control and fixed assets are isolated systems
- Managerial reporting is problematic
- Issuing of cheques is based on manual work

Direct Needs:

- Proceed with the RFP for a new financial system

Conclusions drawn from the analysis: (*may include observations drawn from other interviews and/or documentation, please indicate if you agree/disagree and comment where you feel necessary*)

- Urgent need for a new financial system that will handle electronically the departmental processes, remove duplication of work, and improve communication with other systems.
- The new system should provide customized reports for distribution to other parties (e.g., faculties, administration, etc.)

B.9 Name / Position: ……..

Head of Information Technology Services

Description:

Offers IT services to support the University's community needs. Aim is to provide quality services in the most efficient and cost-effective way.

IT services staff (45 people) is divided into three teams:

- Department local teams
- Central team (Networks, Mail Servers)
- Administrative team

One issue that IT Services need to face is how to get the community accept new IT concepts and ideas. University tries to expand too fast without a proper study on integration and quality. Many of the decisions are sometimes driven by political reasons (eg. better visibility) rather than true needs and the best ordering of these.

There is a need to integrate University services and resources. Also, there is a need for more collaboration between the different teams (collaboration between library and IT services is a good example).

IT Services provide email accounts to all students (web-mail with 5Mbytes limit). Despite this, most students do not use their email accounts.

Desired Changes / Needs:

- Provide online services but with physical presence
- Formalization of procedures and clear policies.
- Create the proper culture – cultural changes needed.
- Consolidation of systems and services

Conclusions drawn from the analysis: (*please indicate if you agree/disagree and comment where you feel necessary*)

- IT Services is responsible for meeting the needs of the entire University in terms of IT. This requires a good understanding of the IT needs of the community. IT services should then meet these needs in the most cost effective way.
- University is relatively young and is growing very fast. However, the University did not have time to consolidate and now many systems are not communicating with each other. There is duplication of data and redundancy in processes. There is a need to integrate and consolidate all services and resources, which must be accompanied by a change of culture to accept these changes.

B.10 Name / Position: ……

Head of Service for Research, International and Public Relations

Description:

This service is responsible for supporting the research done at the University. It is also responsible for promoting the public image of the University and the supporting its international collaboration with external parties (e.g., Cyprus society, European Union, International Organisations etc.). The University organizes various seminars as part of the "Free University". It also publishes the prospectus concerning undergraduate and graduate studies, the research profile of UoC, annual report and various other information leaflets and brochures.

Direct Needs:

- Redesign University web site in order to provide information to interested parties and the public
- Make University publications available online and provide continuous updates.
- Make available through ICT "Free University" seminars for people living outside Cyprus.

Conclusions drawn from the analysis: (*may include observations drawn from other interviews and/or documentation, please indicate if you agree/disagree and comment where you feel necessary*)

- Create a more dynamic web-site for research and the public, in order to "advertise" the work done at the University to the outside world. Web-site should also include all the University publications and updated information regarding University events.
- Distance learning can help the University extend its social outreach to all Diaspora Cypriots (currently available for London only).

B.11 Name / Position: ……..
Head of Technical Service

Description:
Service deals with planning, project management and administration (e.g., RFP, etc.), constructions, operation and maintenance. This service has an additional office on campus that deals exclusively with the University Campus needs.

By its nature, technical services generate and handle enormous amount of paperwork that deals with various aspects of technical projects (probably more paperwork than any other UoC service). Some of the paperwork is correspondence with outside contractors (many of which are not IT ready and communicate exclusively with paper).

Technical services maintain an archive that is separate from the central University archive. Currently the archive is not supported by an electronic archiving system. ProjectWise that is used for project designs management can also be used for archiving. Another possibility would be to adopt the University/Government office automation solution – using Filenet. In this case a study needs to be held on how ProjectWise can be integrated with Filenet.

The main software system used in technical services is MAXIMO. This is used for many processes eg. the maintenance of building, assets recording etc. System is not currently web-enabled. Goal is to catalog all building and resources and open the system to all University personnel via the Web.

Other software systems used are PRIMAVERA for project management and statistical analysis tools, such as STRAD.

Direct Needs:
- An electronic system for handling the correspondence, system should also monitor and follow responses (e.g., email).
- Be able to provide information to outside (e.g., Proposal), also provide access to technical services information via Web (e.g., additional information regarding proposals).
- Need an electronic way to manage inventory and an electronic access to financials (generate reports for European bank that requires access to other financial services)
- A monitoring system that will report building usage (for justifying costs and planning).

Conclusions drawn from the analysis: (*please indicate if you agree/disagree and comment where necessary*)
- There is an immediate need for an **office automation** solution that will handle
  - Electronic archiving of correspondence (both email and scanned paper documents)
  - Workflows for monitoring responses
  - Electronic communication with other systems (e.g., University systems)
- There is a need for **material management** system to keep track of inventory and report for shortages. MAXIMO meets the needs of the services for work management but should be extended to handle assets management (e.g., catalog and manage all material at the University) and open access to all University personnel via the Intranet Portal.

B.12 Name / Position: ……..

Director of Administration and Finance

Description:

Approximately 350 people work as staff under administration services. State of the art technology was introduced in all 7 services; except the Financial Services. The financial services have transaction delays (due to the unsatisfactory software).

Further, there are plans to upgrade and web-enable the following four systems:

- BANNER – which is the main software system for student affairs
- MAXIMO – the main software system for technical services
- New – the software system for file management
- New – to buy a new software system for the Financial Services (web-enabled)

One success factor will be to provide web-access to all the services and reduce response time. Provide users with what they expect in terms of quality of service and response time.

Direct Needs:

- Web-enable services and reduce response times
- An electronic system for the financials
- A new system for File Management
- Introduction of the e-Administration

Conclusions drawn from the analysis: (*may include observations drawn from other interviews and/or documentation, please indicate if you agree/disagree and comment where necessary*)

- Urgent need for an electronic system for the financials. System should allow the financial service to communicate electronically with the rest of the University systems, and the University community to access information (authority granted).
- Web-enable existing systems to allow a wider range of users (e.g., users from other services) and reduce the response time (by allowing remote access to information as oppose to manually requesting information from authorized users).
- Achieve a better integration between the administration software systems, so as to facilitate the sharing of data/information and reduce problems caused by duplication (eg. Data Synchronization).

Appendix C - The Vision and Mission of the University

ΤΟ ΟΡΑΜΑ ΤΟΥ ΠΑΝΕΠΙΣΤΗΜΙΟΥ ΚΥΠΡΟΥ

Το Πανεπιστήμιο Κύπρου στοχεύει να καταστεί ένα πρωτοπόρο ερευνητικό ίδρυμα, επιτυγχάνοντας διεθνή επιστημονική διάκριση εντός του ενιαίου ευρωπαϊκού χώρου Ανώτατης Εκπαίδευσης, προσφέροντας σύγχρονα και ανταγωνιστικά εκπαιδευτικά προγράμματα, και αναγνωριζόμενο ως κέντρο αριστείας στην ευρύτερη περιοχή της Ανατολικής Μεσογείου.

Η Αποστολή μας είναι:

Έρευνα

1. Η δημιουργία ενός οργανισμού με ενεργό συμμετοχή στον ενιαίο ευρωπαϊκό χώρο ανώτατης εκπαίδευσης, που να διακρίνεται διεθνώς και να αναγνωρίζεται ως κέντρο αριστείας στην ευρύτερη περιοχή της Ανατολικής Μεσογείου.

2. Να προωθούμε την πρωτότυπη, βασική και εφαρμοσμένη, έρευνα σε ένα ευρύ φάσμα επιστημονικών περιοχών, με τρόπο που να συμβάλει σημαντικά και ομοιόμορφα κατά Τμήματα και Σχολές, στην επέκταση της επιστημονικής γνώσης διεθνώς.

3. Να συνεισφέρουμε, μέσω της έρευνας, στην αναβάθμιση της τεχνολογίας, την εδραίωση της κοινωνίας της γνώσης και της οικονομίας παροχής υπηρεσιών, στη βελτίωση του περιβάλλοντος και της υγείας, στη βελτίωση της κοινωνικής οργάνωσης και στην αυτοπραγμάτωση του ατόμου, στην ευρωπαϊκή πορεία της χώρας και στη μελέτη και κατανόηση της πλούσιας ελληνικής της παράδοσης, αλλά και στην κατανόηση της αλληλεπίδρασης της χώρας με τον κόσμο της Μέσης Ανατολής και διεθνώς.

Διδασκαλία

4. Να προσφέρουμε πρωτοποριακή μεταπτυχιακή εκπαίδευση που να καθιστά τους φοιτητές κοινωνούς και ενεργούς μετόχους των διεθνών επιστημονικών εξελίξεων.

5. Να προσφέρουμε εξειδικευμένα μεταπτυχιακά προγράμματα προσαρμοσμένα στις ανάγκες ενός σύγχρονου και απαιτητικού εργασιακού περιβάλλοντος

6. Να προσφέρουμε σύγχρονη και πολύπλευρη προπτυχιακή εκπαίδευση που να οδηγεί στην απόκτηση δεξιοτήτων και ευέλικτων γνώσεων υψηλού επιπέδου, να προετοιμάζει αποφοίτους για μεταπτυχιακές σπουδές σε πανεπιστήμια διεθνούς κύρους και να καλλιεργεί την προοπτική της δια βίου μάθησης.

7. Να επιδιώκουμε συνεργασίες με ευρωπαϊκά ιδρύματα ανώτατης εκπαίδευσης και άλλα διεθνή ερευνητικά κέντρα, με στόχο την ανάπτυξη κοινών εκπαιδευτικών και ερευνητικών προγραμμάτων και την ανταλλαγή ακαδημαϊκών και φοιτητών.

8. Να δημιουργήσουμε μια πολυσυλλεκτική φοιτητική κοινότητα, όπου νέοι άνθρωποι να καλλιεργούν την κριτική και πρωτότυπη σκέψη, να διαπλάθουν ήθος και να ολοκληρώνουν τον χαρακτήρα τους.

Κοινωνική Προσφορά

9. Να προσφέρουμε ένα βήμα διαλόγου, αλληλοκατανόησης και συνεργασίας των κοινοτήτων και μειονοτήτων του νησιού, με επίγνωση της παράδοσης και των πρόσφατων ιστορικών βιωμάτων.

10. Να συμβάλουμε στην αναβάθμιση της οικονομικής, κοινωνικής και πολιτιστικής ζωής της Κύπρου, δρώντας ως καταλύτης στον εκσυγχρονισμό της Κυπριακής κοινωνίας και μετέχοντας ουσιαστικά σε θέματα χάραξης πολιτικής.

11. Να ενισχύουμε και επεκτείνουμε πρωτοβουλίες για συνεργασίες με οικονομικούς οργανισμούς με στόχο την καινοτομία και την οικονομική εκμετάλλευση της νέας γνώσης, συμβάλλοντας στην αειφόρο ανάπτυξη.

Εργασιακό Περιβάλλον

12. Να προσφέρουμε ένα πρότυπο συνθηκών εργασίας που να ελκύει και να διατηρεί άρτια καταρτισμένο, δυναμικό και ενθουσιώδες ακαδημαϊκό και διοικητικό προσωπικό, ικανό για κριτική σκέψη και ανάληψη πρωτοβουλιών.

13. Να δημιουργήσουμε ένα ευέλικτο, αποτελεσματικό και ευχάριστο εργασιακό περιβάλλον που να αποτελεί πρότυπο οργανισμού και που ενθαρρύνει τις προσπάθειες του διοικητικού προσωπικού για συνεισφορά στους κοινούς στόχους.

Appendix D - The Technical part of an e-University project

D.1 What does it include?

A large technical project is part of each e-University strategy. Here is a brief summary of these technically related activities. This technical brief is given here to complete the e-University project activities and is only necessary in complementing and providing a whole picture in the adoption of the e-University strategy.

Every e-University project is based on a sound and technologically advanced information technology infrastructure for its successful outcome. By definition an e-University makes use and depends on this technology to deliver its products. This technological infrastructure is comprised of the following parameters:

- a state of the art communications network (data network and voice video network)
- a state of the art computing infrastructure comprised of the necessary computing units and their relevant software
- an enterprise authentication and authorization system (what is sometimes called the “single sign-on”) by which a user can sign in to the entire system only once and get access to all the appropriate resources for which he is authorized
- an applications infrastructure that is able to exchange information in a coherent and well define method
- an IT department with personnel well trained and capable to take the challenge of leading and paving the way to a transformed and innovative organization

D.2 What it achieves

- Implements a state of the art communication network system
- Implements a single-sign on system (AAA – authentication, authorization, accounting system) for the UCY that will provide the basis for enterprise wide access to information
- Establish new application methodologies that allow different systems to communicate among themselves for the exchange of data. It adopts standard "open technology architecture" methodologies especially those designed for higher education. The "open" standards system allows the gradual inclusion of any new applications that will be required by the UCY in the future
- Redevelops the corporate web site into a Portal interface to incorporate existing and developing systems and services such as (but not limited to):
    - Library – online information services
    - Human resources
    - Financial management
    - Student administration
    - On-line courses and online teaching and learning platform
    - CRM services
    - ERP services
- Implements a Content Management System that allows information providers, service centers, academic departments, the library and others to provide their own timely information to the corporate web Portal via a "content management system"

- Examines the various alternatives for implementing the web Portal such as developing in-house, outsource or a mixture of the two. Promotes innovation in the organization by allowing the ability to learn and keep the organization independent. Traditional pioneering institutions are not so much dependent on outside vendors but create knowledge or participate in the creation of knowledge with other institutions.

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