Message

From the Director

Taking Aim . . . is a statement of strategic direction which builds on the progress made in the period 1990 to 1995 by way of the strategic plan -- ***Riding the Wave***. This new statement is intended to assist the University in achieving its vision outlined in ***Degrees of Freedom: A Strategic Plan for the University of Alberta to the Year 2005***.

Our Strategic Directions Team places before the University community a response to a set of existing conditions, and an extrapolation of the resulting environment into a simulated future. ***Taking Aim . . .*** is not a strategic plan, although with the articulation of short-term actions, it assumes some of those characteristics. However, we believe our future is far too uncertain to state definitively, by way of multi-year actions, what its nature will be.

We have chosen the powerful image of **The Archer**, by John Nieto, to depict visually our intentions. Like the archer, whose feet are firmly planted in the ground, we frame our directions in terms of initiatives and goals which are rooted in the accomplishments of our past. Like the archer, who aims a bow and arrow toward the heavens, we see a limitless future -- a future which is whatever our imaginations can make sense of. Like the archer, whose colours stir the senses, we see ourselves and our services as vibrant contributors and contributions to the academic enterprise.

By its nature ***Taking Aim . . .*** does not deal extensively with each task and function of our contribution. Our actions in achieving our goals will always be situational. But, all activities such as reference, instruction, circulation, collection management, preservation, systems, inter-library loan, cataloguing, and acquisitions are the collectivity of our services. They are the continuing foundation upon which we will achieve our goals. We must do our best, under trying circumstances as our personnel and materiel resources shrink, to maintain and enhance all of these. Yet, at the same time we must grow, evolve and take advantage of opportunity.

Thus, the actions here represented are meant to encompass only activities which both position us along our arrow's path, and are achievable within a twelve to eighteen month period. We are committed to developing a strategic process which will review our direction at this interval. We will then develop new actions, consistent with the circumstances of the moment, which will continue to move us toward our mission.

Now, permit me one final word. I wish to express my gratitude to the Strategic Directions Team for their work on our behalf. They were hardworking and dedicated to their charge. And, while their contribution has been consequential, they are but members of a staff complement which excels each and every day, making our institution one of the most dynamic and innovative in the country. Thank you.

Ernie Ingles

Director of Libraries

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Introduction

Our Mission

We serve the information needs of the learner by providing effective access to information resources within and beyond our walls. We serve by harmonizing innovative and traditional information products and services in support of learner defined needs.

Our Values

Learner

We accept the centrality of the 'learner ' as our primary principle, whether the learner is a faculty member, a student, or a community member. We create our service culture on the basis of creating a continuum for the learner between information resources and information services.

Leadership

We are active in creating innovative strategies for achieving learner-defined goals. We are committed to experimenting with the untried, and perceive change as a challenge. We are flexible in our approach to managing change, drawing from best practice in support of our mission.

Quality

We define quality as a degree of excellence. A quality product or service is one which meets learner expectations.

Intellectual Freedom

We believe that access to information is a fundamental right in a free society. We are committed to providing access for our clientele to all expressions of knowledge, creativity and intellectual activity, including those which may be considered by some to be unacceptable, unconventional, and unpopular in a supportive, learning environment. As part of the research library community, we acquire, maintain, and make available the widest variety of materials that support the scholarly pursuits of the University.

Information Literacy

We enable the learner to find needed information in a timely manner. We see information literacy, that is, the ability to be self-sufficient and self-motivated in locating, accessing, using, and evaluating information, as a necessary skill in the information age.

Selectivity

We take a focused approach to the allocation of resources and the setting of priorities. We are guided by the priorities articulated by the University, by our responsibilities as a member of the local, national, and international information communities, and by our partner agreements.

Human Resources

We value the role each individual staff member plays in meeting our mission. We encourage and support the development of a knowledgeable, versatile, and skilled staff. Staff at all levels are empowered to achieve results through training/development, trust, delegation of authority, and working in a team environment.

Cooperation & Partnerships

We believe in mutually advantageous partnerships in order to extend and enhance our resources. We will be open to ventures with business, industry, government, and other information providers which offer reciprocal benefit.

Accountability

We are accountable for the priorities we set, the allocation of our resources, and our performance. We develop appropriate measures, and we communicate the results freely inside and outside the University.

Our Strategic Directions – Summary

Information Resources Development

Our definition of 'collections' has changed. Today we speak in terms of 'knowledge and information resources.'

Learner Services

Our focus will be preparing learners to adapt to continuous changes in how they interact with the knowledge and information environment. We strive for a seamless continuum between knowledge and information resources, learner services and enabling technologies.

Human Resources

Our people must be capable of responding quickly to changing learning conditions; they must be confident in working with new information technologies; and, they must be motivated.

Physical Facilities and Technology Infrastructure

Our physical space must be designed with closer attention to guiding the learner, by minimizing obstacles and the need for directional assistance, consolidating service points, and providing a comfortable environment.

Communication

Our staff should have adequate information to perform effectively. They should also have the necessary communication skills to interact with our learners and colleagues.

Enhancing the Resource Base

Our traditional funding sources will not serve all our needs in the transition to a new information and learning environment. We must continue our traditional approaches, but we must also be active and innovative in creating revenue.

Accountability

Our challenges are to accept or create structures, policies, and measures which are appropriate for the emerging environment; which are based upon internationally accepted methodologies; and, which are focused on service and the needs of the learner as an individual.

Our Environment

In developing the strategic directions outlined in ***Taking Aim***..., we derived guidance from a review of key documents, themselves reflecting a fast-paced and dynamic transition in thinking about adult learning within the province, as well as at the University of Alberta. Our initiatives, goals, and actions were shaped by the University's reflections upon these documents, and particularly by the discussions which surrounded their stated intentions and challenges. These documents included, but were not limited to:

Degrees of Freedom: A Strategic Plan for the University of Alberta to the Year 2005. (1993)
Making Sense...of Research at the University of Alberta. (1994)
Adult Learning: Access Through Innovation: Draft White Paper: An Agenda for Change. (1994)
Agenda: Jobs and Growth: Improving Social Security in Canada. (1994)
Celebrate (Too!): The Strategic Initiatives of the Office of the Vice -President (Research). (1995)
Making the Grade: A Survey of Student Opinion. (1995)
Draft Report of the Senate Task force on Technology in Learning. (1995)
Your Library in Transition, (Questionnaire). (1995)
Strategic and business plans prepared by University faculties and administrative units.

In addition, we were influenced by directions either recommended or set in:

Towards a Strategy for Human Resource Development in Libraries, Archives and Records Management. (1994)
Libraries: ASAP - A Strategic Action Plan for Information Services in Alberta. (1995)

In terms of setting our direction and establishing our priorities, the telling words and descriptors which were most often used in the above and other documents, and which we heard frequently in discussions characterizing the post-secondary educational environment, were: "at a crossroads"; "special challenges"; "accessibility"; "learner-centred"; "non-traditional student"; "new approaches"; "alternative delivery"; "educational revolution"; "growing budgetary stringency"; "affordability"; "responsiveness"; and "accountability".

And, perhaps the most succinct and overarching expression of the expected environment was that offered in ***Adult Learning: Access Through Innovation***, which stated, "...we have reached a point where it [adult learning] must change fundamentally from what it has been in the past, so that Albertans can grasp the opportunities of the future."

The realization that change is a constant, and that resources are severely limited, has significant meaning to a unit that will have eliminated $ 4,715,411 from its budget to 1996, and will have lost in excess of 130 staff positions as a direct result. It also has significant meaning to a unit which has responded to these challenges imaginatively, creating solutions in terms of work processes, technology adoption, and facilities management which have been praised and emulated by other institutions, and which have received a number of awards for creativity and innovation.

Within this dynamic environment there is a constant quest for understanding — somewhat of a contradiction to the apparent reality of the challenges and pace of change associated with this 'information society.' Nonetheless, these ongoing challenges remain diverse and complex, and discussion of responses is prefaced frequently by the question "how?"!

How can we manage issues of resource allocation when dealing with the transition to a digital information environment? How, at the same time, can we continue to fulfill our traditional role of collecting and preserving printed resources? How do we best prepare staff and provide learners with literacy skills for a more diverse array of information products? How will professional and associate staff roles change? How do we cope with increasing staff and learner expectations with a shrinking resource base? How do we fund new services which are essential to providing intellectual access to information and knowledge in traditional and emerging formats? How can we work effectively with learners during these turbulent times, in an ever-changing environment? These were but a few of the pressing questions.

With these and other questions in mind we evaluated a number of models in search of a context from which to frame our strategic directions. Increasingly, our responses turned back to the concept of 'learner as individual.' Within this framework, we found resonance in the literature of the post-information age — particularly the works of Nicholas Negroponte and Arno Penzias.

Negroponte writes that in the post-information age "...we often have an audience the size of one. Everything is made to order, and information is extremely personalized"; and, Penzias characterizes the transitions of the past from quantity (typical of the industrial age) to quality (typical of the information age) to what might be characterized as the "harmony era," a point where we go beyond the uniformity of distinct products and distinct services, to a harmony between product, including technologies, and personal needs (the post-information age). We must now build a state where products and services work with each other.

Our perspective thus changes. It is neither on the product nor the service but on a harmony between the two as required by the individual. We are then drawn to the term 'learner' as used by the Department of Advanced Education to define our traditional patron or user, whether a faculty member, a graduate student, an undergraduate student or member of the external community. All come to us as learners or recipients of our enterprise.

The meaning, for us, of 'learner-centred' no longer means massaging information products to target a generic profile; it means focusing on what the individual wants and needs; it means developing flexible systems and services to satisfy those needs; and, it means assisting our clientele to be self-sufficient and self-motivated learners.

As we work with all University faculties and administrative units to meet the strategic objectives outlined in ***Degrees of Freedom***, we will specifically address **Initiatives 10, 11, 18, and 19.** Our focus will be the individual learner, or learner as individual. We will shape our responses and seek harmony by being sensitive to the balance between the legacy formats of print and microform (and the priceless record of intellectual achievement which they represent), and the information and knowledge prospects inherent in the digital age (and the vast resources now accessible worldwide).

Our Strategic Directions

Information Resources Development

Four trends have initiated a change in our thinking with regard to the academic enterprise and the nature of 'collections.'

First, is the inability of all research institutions to keep pace with the cost of scholarly materials -- for more than two decades inflationary pressures have been relentless and currency pressures have dramatically eroded purchasing power. Second, is the continuing increase in the fields of knowledge in general, and those under study at the University -- we experience ongoing but unfulfilled demand for a growing universe of publications. Third, is the proliferation of formats which must be acquired to support the learner -- today we must provide resources in print, microform, CD-ROM, local electronic data files, local electronic full-text files, etc. Fourth, is the nature of the evolving network and the access to intellectual property which it underpins in all formats, elsewhere -- our collection decisions now must factor in such elements as network tools, training and literacy issues, document delivery systems, etc.

Thus, the definition of 'collections' has changed, and we must now expand and frame our thinking more broadly in terms of a harmonization of diverse 'knowledge and information resources.'

The models which will shape our decisions must consider differences of inquiry among the various disciplines. They will be impacted by emerging alterations in publishing practices and pricing algorithms for information. They will define the nature of our core collections in each discipline. They will look to more intensive collecting in those areas identified as academic priorities and centres of excellence. They will be characterized by cooperative ventures with other institutions, government agencies, and vendors. Finally, our models will recognize the cost efficiencies and effectiveness of reliance upon commercial document on-demand suppliers.

Within this context, our decision-making will not be easy. Difficult choices will have to be made. But in terms of strategic direction, we strongly believe that our future lies in: paying increasing attention to digital resources; realizing that we must be a leader or a reliable partner in multi-institutional alliances; and, accepting that these resources and activities will consume an increasing percentage of our budget.

GOAL I: *To work with our learner community to explain the evolving concept of 'collections' and 'knowledge and information resources,' and achieve an understanding of the need to harmonize the resource continuum which includes local and remote access in service of learner needs.*

Action 1: We will initiate the development of a model for access to, and delivery of, resources; that model to include a realigning of the materials and document supply budget allocations.

Action 2: We will engage a broad-based communication plan across the segments of our learner community to advise them of our new approaches.

GOAL II: *To define the nature of the 'core collection' in all disciplines -- in the context of both print and digital formats -- based upon best judgments of the requirements for instruction and basic graduate level research, as instructed by* ***Degrees of Freedom****, 'Recommendation 41.'*

DEGREES OF FREEDOM
is the title of the University's Strategic Plan.

Action 1: We will develop reports from the DRA Gate which provide data on the use of various areas of the collections.

Action 2: We will realign existing collections, harmonizing the defined 'core' with resources available from remote sources, beginning with disciplines in science and engineering.

GOAL III: *To provide an appropriate level of support in areas where our traditional collections and University research have achieved and maintained a national or international reputation.*

Action 1: We will identify those collecting areas which have achieved prominence, but which no longer appear active in support of programs at the University.

Action 2: We will develop a strategy for the ongoing support, disposition, or storage of such collections.

AREAS OF ESTABLISHED EXCELLENCE:

- Analytical Chemistry
- Carbohydrate Chemistry
- Catalysis and Catalytic Reaction Engineering
- Cosmology
- English Literature
- Environmental Sciences and Engineering
- Fish Endocrinology
- Geotechnical and Structural Engineering
- Lipids and Lipoproteins
- Neuroscience
- Pharmaceutical and Medicinal Chemistry
- Printmaking, Performance, and Piano
- Protein Structure and Function
- Social and Managerial Aspects of Sport and Leisure
- Western and Northern Canada

GOAL IV: *To create budgets which demonstrate an awareness and an assessment of the need to fund, the areas of research or creative work which the University has identified in the statement prepared by the Vice President (Research) entitled* ***Established and Emerging Research Excellence at the University of Alberta.***

AREAS OF EMERGING EXCELLENCE:

- Artificial Intelligence, Robotics, and Control Systems
- Cell and Organ Transplantation and Immunology
- Fluid Dynamics and Transport Phenomena
- Particle Physics
- Professional Service Firm Management
- TRLabs
- Viral Pathogenesis

GOAL V: *To ensure timely accessibility to remote information resources, we will strive for seamless integration of commercial document supply capability into our service array, in order to complement and supplement local collections.*

Action 1: We will aggressively promote the use of document supply services.

Action 2: We will confirm CISTI, by agreement, as our major document supplier in the areas of science, technology, and medicine, and we will integrate CISTI service by way of the Intellidoc initiative.

Action 3: We will reaffirm our resource sharing relationship with the University of Toronto.

CISTI

is the Canada Institute for Scientific and Technical Information.

GOAL VI: *To ensure timely accessibility to remote information resources, we will initiate or participate in consortia arrangements, or other multi-institutional alliances, which are reciprocally beneficial as instructed by* ***Degrees of Freedom****, 'Recommendation 42.'*

Action 1: We will assist in the development of the operational and budget planning of the local NEOS consortium.

Action 2: We will respond to continuing requests for information on membership in NEOS, and we will strive to add one new institution to our DRA Services Agreement.

Action 3: We will work aggressively with individual NEOS libraries, and sub groups of NEOS, to foster enhanced levels of partnerships, including additional shared citation databases, learner-initiated interlibrary loan services, and links to other institutional and commercial databases.

Action 4: We will be active in the provincial L-ASAP initiative.

Action 5: We will seek funding to participate in the regional COPPUL/COWCUP initiative.

Action 6: We will monitor, and respond as appropriate, to the national CAN-LINKED initiative.

Action 7: We will participate in the ARL - GIS information literacy initiative.

NEOS

is a consortium of twenty libraries cooperating to share a common library system, and integrated learner services.

COPPUL

is the Council of Prairie and Pacific University Libraries.

COWCUP

is the Council of Western Canadian University Presidents.

CAN-LINKED

is a Proposal for the co-ordinated development of a distributed National Digital LibrarySystem in Canada — the Propoal sanctioned by the 'Group of 10'.

L-ASAP

has responsibility to create a province-wide information network.

ARL

is the Association of Research Libraries.

GIS

is the Geographical Information Systems.

Learner Services

Traditionally our services have been defined by an emphasis on the content of the collection, with mediation for the learner in the use and navigation of the print, mechanical or electronic tools which provide access to that collection. Our focus is evolving insofar as we now feel our proper role is to respond to the requirements of the individual learner -- requirements not based solely on our assumptions, but framed in terms of a confluence of our best judgements, their point-of-use, and their time-of-need.

In this environment collections and information technologies remain key, but the traditional demarcation also blurs between collections (knowledge and information resources), services, and enabling technologies. Our new models will attempt to create a seamless continuum -- a harmony -- between these components, as the elements themselves converge in an environment that is increasingly digital.

There has been much said on the nature of the 'transitional period' in which we create these models of service. We envisage the foreseeable future as experimental. In many ways today's success will be measured by our ability to prepare learners to adapt to continuous changes by way of interacting with the knowledge and information environment, whether during their formal educational experience, or as they function within a knowledge-based society which is predicated on life-long learning.

In this period of experimentation, our services will be shaped by four elements.

First, our priority will be learner-centered learning; that is specifically, services required by the undergraduate and graduate, as defined by them using such tools as *'Your Library in Transition'*. Second, we will focus our attentions on creating self-motivated learners; that is, learners should expect to be self-sufficient in many of their interactions with the organization, its services and its technologies. Third, we will strive for more flexible programming, and experiment with alternate options of service delivery; that is, programming will attempt to liberate the student from the constrictions of time (service hours) and place (buildings). Fourth, we will recognize the complexity and volatility of the current information environment which is transforming our role from that of stewards of a stable information repository, to dynamic integrators of diverse information services and products.

HOME PAGE

is the top level document of a World Wide Web site, usually the visitor's starting point.

GOAL I: *To assume our role as integrators of a changing array of local and network-based information resources, and instruct learners and develop programming which provides the opportunity for learner self-sufficiency.*

Action 1: We will implement a home page as the starting place for learners to access our knowledge and information resources, our services, and our learner information and instructional materials.

Action 2: We will provide a Web-based search interface to The Gate, as well as to a range of citation databases.

Action 3: We will introduce on our Web page a test environment by which we will prototype alternative learner interfaces and services for the purpose of eliciting feedback.

Action 4: We will increase the learner's access to staff support by providing electronic contact information and integrated electronic mail capability for remote reference and feedback.

Action 5: We will provide linkages to related information services on campus, such as the exam registry, bookstore information, and computing skills instruction.

THE GATE

is the learner's access to the holdings of the NEOS consortium and a gateway to other databases and electronic resources

GOAL II: *To redesign routine, high-volume service activities to maximize user-self-sufficiency and minimize staff mediation.*

Action 1: We will implement a self-service checkout capability.

Action 2: We will permit patron query of personal borrowing record.

Action 3: We will implement on-line material renewal.

Action 4: We will develop and pilot an electronic full-text reserve collection capability, providing document retrieval for remote display or print-on-demand.

Action 5: We will implement an on-line request service from The Gate for delivery to pick-up locations among the NEOS libraries.

Action 6: We will extend learner access to a wider range of databases.

GOAL III: *To redesign the information access environment from one of group-defined services to individualized services.*

Action 1: We will introduce the One-Card capability in order to implement and integrate personalized or authentication-based services.

ONE-CARD

is a magnetic strip, card based technology designed to facilitate financial and authentication transactions.

Action 2: We will link licensed electronic information resources to the campus network identification initiative.

Action 3: We will create the capability for developing information search profiles or scripts of information search strategies, with a capability for remote delivery of results.

Action 4: We will provide mechanisms for direct learner on-line ordering of print materials, with notification capability.

Action 5: We will work with the L-ASAP planners to provide learners with a 24 hour information line.

GOAL IV: *To create information literacy programming which responds to a range of learning styles.*

Action 1: We will examine the feasibility of developing or acquiring computer-assisted learning modules for basic information literacy skills, either to be available on-site or through the campus network.

Action 2: We will partner with others on campus, or with other institutions, to develop instructional programming in computer literacy and network navigation skills.

Action 3: We will seek to participate in alternative delivery working groups and pilot initiatives.

Action 4: We will work to be the first line of access pointing from the WWW to campus information resources.

Action 5: We will prepare our infrastructure in order that we might be the agent of access for established courseware.

ARIEL
is software enabling the transmission and receipt of textual files over the Internet

GOAL V: *To create an environment where information is brought to the learner's desktop.*

Action 1: We will integrate remote document request and supply capabilities into learner workstations, by way of a Web-based search interface.

Action 2: We will extend ARIEL document transmission technology to NEOS libraries.

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Human Resources

Ongoing changes within the academic community, a significant reduction in staff numbers, and the impact of a rapidly evolving information environment demands placing human resource issues high on our strategic agenda. 'Initiative 18' of ***Degrees of Freedom*** spoke directly to the need for staff to have the necessary tools and training to enable full and effective contributions to the University's mission. This necessity has been recognized more recently by a document prepared by the Vice-President (Finance and Administration) entitled: ***The Human Resources Subcommunity: A Review of Structure and Leadership***.

That has also been the focus of the A.L.A.R.M. strategy initiated by the Industrial Adjustment Services Committee of Human Resources Development Canada. All workers within the information resources sector have been identified by this committee as playing a crucial role within individual organizations, the emerging economy, and society at large. Their training and development requirements are seen as a national priority.

A.L.A.R.M.

is an alliance of representatives from the Information Resources Sector of the Canadian workforce.

Like all information sector organizations we require competent, confident, flexible, service providers who are secure in their work relationships. Staff must be capable of responding quickly to changing learning conditions; they must understand our quality objectives; they must be confident in working with new information technologies; and, they must be motivated.

Clearly, if we are to achieve these ends, our challenge reflects that of the entire human resource subcommunity at the University. Restructuring as a product of our restraint environment has resulted in some disquietude. Stress levels have increased. It is timely that human resource issues be seen as a 'critical activity' as they have a direct bearing on our achieving all our goals.

Operational difficulties that result from outmoded policies, including outdated agreement language, must be addressed. Job structures and specifications must be revisited. Personal needs and aspirations must be in harmony with institutional interests. It is clear that if we are to attain a defined level of quality and operational flexibility, our human resource policies and procedures must support our mission.

With all these requirements in mind, we see our challenges in three areas: first, to recruit appropriate staff at all levels with the knowledge and skills to provide high quality learner services in a rapidly changing environment; second, to provide all staff with training and development opportunities consistent with our quality objectives; and, third, to create an enabling work environment which meets staff working needs.

To address these challenges we will give priority to developing Quality Assurance (QA) components, understanding our Accountability goals, for our V.I.P. programme; and, to work with the broader human resource subcommunity of the University in developing and implementing a personnel plan.

QUALITY ASSURANCE

encourages organizations to provide services to a level of performance confirmed by learners.

GOAL I: *To develop a coherent personnel policy, anticipating environmental opportunities, reflecting operational requirements, and encompassing agreement obligations.*

Action 1: We will work with the human resources subcommunity on campus to rationalize the personnel function, both academic and non-academic.

Action 2: We will renegotiate the *Librarian Agreement.*

Action 3: We will develop mechanisms to identify ranges of job levels for non-academic staff and within each range articulate the requisite skills, knowledge, and expectations, with an intent to ensure a coherent plan for career progression through the levels of each identified range.

V alues
I mprovements
P rocesses

is the framework of our total quality management initiative

GOAL II: *To deliver learner services within the context of our V.I.P. programme.*

Action 1: We will redefine our V.I.P. contract within the context of ***Taking Aim...***.

Action 2: We will create and deliver a V.I.P. orientation programme for all new, or recently relocated staff, including full, part-time and casual appointments.

Action 3: We will enhance our support for unit specific team-building initiatives.

Action 4: We will select and train a core cadre of facilitators for the purpose of process improvement.

Action 5: We will develop a code of behaviour for operational and process focused teams.

GOAL III: *To be distinguished as an organization whose staff are prized for innovation and flexibility, and who are equipped to perform within an environment of Quality Assurance.*

Action 1: We will define the training and development requirements of Quality Assurance.

Action 2: We will conduct an organization-wide training and development audit, including a needs assessment and inventory, to establish benchmarks and assess the effectiveness of our current training programme.

Action 3: We will create pilot programmes geared toward identified high priority needs.

Action 4: We will develop a Quality Assurance training and development programme, with appropriate documentation, tools creation, problem solving skills, etc. consistent with our corporate requirements, and accountability obligations.

GOAL IV: *To create a physical working environment in which staff feel comfortable delivering service to the learner.*

Action 1: We will examine the adequacy of our work spaces, and prepare a plan for renovation and improvements.

GOAL V: *To be characterized as having a staff comfortable with, and proficient in the use of all appropriate information technologies.*

Action 1: We will increase the intensity of our Internet tool training.

Action 2: We will develop and deliver training programming for the Intellidoc document stations.

Action 3: We will focus on the delivery of training for database systems (i.e., OVID, OCLC First Search, Silver Platter products).

OVID

is a UNIX database server providing Internet access for licensed users to a range of journal citation databases in the health and social sciences.

Physical Facilities and Technology Infrastructure

BARD

is an off-campus storage facility with capacity for 3.2 million volumes.

Our success in achieving our strategic goals as outlined in ***Riding the Wave***, for example our systems' implementations, our networking infrastructure development, and our creation of the Book and Record Depository (BARD) have positioned us well for the challenges of the years ahead.

Despite these accomplishments, technology intensive services and the rapid growth in digital information formats are placing severe pressures on our facilities. Collection space must be converted to service and learner space as housing requirements of active collections decrease in the face of technology-based access and service delivery. Existing spaces are being stretched to accommodate shifting material formats and discipline structures, new usage patterns by traditional and non-traditional learners, and a technology infrastructure requiring constant upgrading.

Physical space must be designed, re-designed, and re-designed again with closer attention to guiding the learner more effectively through the information seeking process, minimizing obstacles and the need for directional assistance, consolidating service points to effect cost efficiencies, and providing a comfortable environment with the appropriate technology for the varied needs of group consultation and individual study.

In addition, the design and use of physical space will be influenced by the emerging importance of the 'virtual space' created by the technology of the campus information network, the evolving directions for microcomputing labs, electronic classrooms, and alternate delivery learning paradigms. The near future represents a period of transition in which the physical campus environment serves as the host for this virtual space, until such time as universal telecommunications access and computer ownership truly extend the learning and information environment beyond the campus boundaries -- first across the neighbourhood, then across the province, and ultimately around the world.

GOAL I: *To refit existing spaces, and create new spaces, to permit a more logical integration of collections and service points.*

Action 1: We will integrate humanities and social sciences collections of the Rutherford complex into one sequence with a single point of learner services.

Action 2: We will integrate the humanities and social sciences satellite collections (Government Publications, the Data Centre, the Music Resources Centre) into the Rutherford complex.

Action 3: We will complete the major renovation and re-development of the Bibliothèque Faculté Saint-Jean.

GOAL II: *To conceive the aggregation of print and microform resources, together with local and remote electronic resources, as the information 'heart' of the campus for study, research consultation, and technology-based learning.*

Action 1: We will develop a self-contained, extended-hours study capability capable of providing public computing access to the digital highway, providing such services as electronic mail, study and course review, and 'plug and play' connectivity.

Action 2: We will plan for the creation of a humanities and social sciences computing centre in the Rutherford complex.

Action 3: We will initiate a smart classroom project in the renovated Cameron and Rutherford facilities.

'PLUG AND PLAY'

connectivity is a spectrum of capability ranging from simply powered study stations, to full network accessible carrells.

GOAL III: *To expand and enhance our facilities to anticipate the increased use of diverse technologies by learners as the University explores alternate course delivery models.*

Action 1: We will develop a multimedia centre in the H.T. Coutts facility which will include the capacity to become an instructional innovation hub.

Action 2: We will implement a pilot project to provide full campus network services from selected public workstations by way of WWW interfaces.

INTELLIDOC

is a high speed, high volume Internet based document delivery system which integrates all components of the document supply process.

GOAL IV: *To maintain a high quality network and computing infrastructure for learner productivity, access, and service delivery.*

Action 1: We will implement the Intellidoc document management system for order, receipt, scanning, and electronic delivery of text documents.

Action 2: We will develop a rationale for the continuous replacement of computing equipment over a five-year depreciation cycle.

Action 3: We will strengthen our network management capabilities through the implementation of server utilities for automated hardware/software inventory, diagnostics, and license monitoring.

Action 4: We will create a new professional position to act as a system-wide database and license manager.

Action 5: We will extend our database server architecture to ensure a flexible range of platforms to support the provision of citation, text, and image bases over the wide area network, and to attract partnerships with consortia partners, faculties, and departments in these services.

Action 6: We will upgrade our authentication services in collaboration with Computing and Network Services (CNS), and consistent with the campus OneCard initiative.

Communication

All staff, especially those directly involved with services to the learner, should have adequate information to perform effectively their duties and responsibilities. They should have, also, the necessary communication skills to interact with our learners and colleagues, as well as with the external communities. In short, the existence of an appropriate information system is an essential tool for communication and for service delivery. It is only by way of such a system that all stakeholders achieve an understanding of their shared traditions, imperatives, and visions.

The vehicles for dissemination are numerous, but might include management briefings, general or unit specific information exchange meetings, documented information, and information technology tools. Whatever the vehicle, we are resolved to be more focused in three areas: communication with and between our staff and service units; communication with the University community; and, communication with the external community.

GOAL I: *To improve organizational communication in order to provide an atmosphere of common purpose, and provide the appropriate infrastructure for learning.*

GOAL II: *To communicate our endeavors to the University community in a timely fashion, encouraging feedback and interchange, and with demonstrated appreciation to learners as contributing partners.*

A COMMUNICATION PLAN

is a structured analysis of the strategy and tactics to reach targeted groups.

Action 1:	We will train service units in creating communication plans.
Action 2:	We will invoke communication plans for major service initiatives.
Action 3:	We will train staff in the use of focus groups as tools for ongoing learner participation in service development.
Action 4:	We will employ technology to advise learners on our current and new service offerings, and our achievements.

GOAL III: *To enhance the reputation of the University by heralding our achievements to the external community and permitting the community to share in our pride and join in celebrating our accomplishment.*

CELEBRATE!

Enhancing the Resource Base

Traditional funding sources will not serve all our needs in the transition to a new information and learning environment. Government policy demands that the University reduce dependence on funding from grants. As a result, learners are being asked to assume greater responsibility for the costs of their learning. But even so, there is an emerging imbalance as the gap widens between declining revenues, representing the University's inability to keep pace with cost by way of its traditional sources (grants and tuition revenues), and the escalating expense of providing the learning experience.

Within the context of providing information services and resources, the causes of this gap are, broadly, twofold. First, the costs of providing learners with information resources continues to escalate; the inflation rate for print resources has been in double digits for years, and the digital information marketplace is rewriting the economics of publishing, with every new license adding capability but also considerable incremental cost. We have been unable to keep pace. Second, it is becoming increasingly difficult to provide learners with services; the reduction of the staff complement puts extraordinary strains on remaining personnel. Yet, we are requested to respond to the expectations of learners for current as well as new information products and services.

Our response to this resource dilemma must be multifaceted. To enhance our information resources and maintain our services we must continue with our traditional approaches. For example, we must pursue monetary gifts through our established donor base; we must actively seek out donated collections and other gifts-in-kind; and we must partner with other University units to co-sponsor specialized information services.

In addition, we must be bolder in pursuing new donors for major capital initiatives; and we must be innovative in creating revenue. To this end, we must create our own revenue opportunities by delivering, either independently or in partnership with others, services and products which serve an unfulfilled and unserviced demand, whether on campus or off.

LEARNING PAVILION

is a legacy project to link the University with the people of Alberta. It is a place to bring knowledge, experience, and scientific discovery to the people of Alberta, and celebrate research, teaching, and learning.

GOAL I: *To focus development efforts in areas which offer a special appeal to the community and a return to the University.*

Action 1:	We will partner with the Department of Museums and Collections, and other University units, to promote the development of the 'Learning Pavilion'.
Action 2:	We will create a development strategy which targets information technologies.

GOAL II: *To work through University Information Enterprises (UIE) to produce a range of contractual services to be marketed to the external community.*

Action 1: We will continue to develop, in conjunction with the University of Calgary, the capabilities of the Health Knowledge Network (HKN), and begin to market the Network to the heath-care community.

Action 2: We will prepare a proposal for the consideration of the Capital Health Authority for the contracting of their information services.

Action 3: We will pursue contract service opportunities in other professional sectors.

UIE

is a business unit serving the community through information services and knowledge transfer.

HKN

is a gateway service to a suite of health-related databases and document supply.

GOAL III: *To introduce a range of value-added, fee-based service options beyond the traditional core services expected by learners.*

Action 1: We will develop new services for printing on demand from electronic information services.

Action 2: We will develop a range of options for expedited document delivery.

Action 3: We will institute an on-campus retrieval and delivery service.

Action 4: We will explore opportunities for extending computer and network skills training programs to others, on campus and off.

GOAL IV: *To develop protocols to guide staff in identifying and bringing partnership or commercial opportunities forward for administrative consideration.*

Action 1: We will develop a training programme to assist managers with the preparation of business plans.

Action 2: We will prepare a model for co-sponsorship and co-licensing with faculties of database services.

Accountability

Adult learning: Access Through Innovation committed educators in the province to implementing a framework for accountability. Albertans want assurances, the White Paper stated, of the effectiveness of their investment in post-secondary education. Government resolve was evidenced by the introduction in May, 1995 of the *Accountability Act* which articulated expectations of government ministries and referred to the need for measurement tools.

Degrees of Freedom addressed the issue of accountability and established it as one of the key principles in support of the University's mission. To this end, University officers have also participated on the Task Force on Performance Indicators created by the Universities Co-ordinating Council.

We have a long tradition of accountability. However, our measurement tools are currently based on quantifying objects or activities (holdings, questions, circulations, people, etc.) and comparing the figures with a diverse array of other institutions. These methods have become irrelevant to the evolving learning cultures, to the access concepts intrinsic to the digital world, and to a quality environment. These present methods, indeed, impede our efforts to succeed in establishing new directions.

Our challenges are to accept or create structures, policies, and measures which are appropriate for the emerging environment; which are based upon internationally accepted methodologies; and, which are focused on service and the needs of the learner as individual.

We see our response within the stringent requirements of 'Quality Assurance' (QA). Our focus will be on the distinct requirements of the learner; it must be on a service which is responsive to institution-specific strategic directions and goals; and, it must be based on process performance, and institution-based learner feedback (such as that in ***Making the Grade: A Survey of Student Opinion***).

RICHARD DOUGHERTY & ASSOCIATES

delivers a Visions Workshop that inaugurates implementation cycles.

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GOAL I: *To demonstrate administrative commitment to addressing the directions, goals, and actions in **Taking Aim...**.*

Action 1: We will engage Richard Dougherty & Associates to deliver a visioning workshop to help us ensure the successful implementation of the ***Taking Aim...***.

GOAL II: *To work toward registration as an ISO 9000 compliant service organization.*

Action 1: We will register our intentions with the Quality Certification Bureau.

Action 2: We will initiate an evaluation of our current processes and procedures against the requirements of the ISO 9001-9004 Standards.

Action 3: We will begin preparation of a Quality Assurance programme, involving 'preassessment' and a 'registration audit' by a quality system registrar.

Action 4: We will prepare a Quality Manual.

ISO 9000

is a set of five standards conceived to increase the confidence organizations have in the quality of their services. The standards define the important elements needed to achieve quality assurance.

GOAL III: *To be vigilant in monitoring operations and service performance, and strive for continuous improvement in our services.*

Action 1: We will initiate a quality system for learner services compliant with ISO 9004-2:1991.

Action 2: We will publicize the features and characteristics of those services in a learner's contract which bear upon a learner's stated or implied needs, framed within the availability of material resources, and consistent with Chapters 4, 5 and 6 of ISO 9004-2:1991.

Action 3: We will develop and implement an interim point of encounter questionnaire to measure learner satisfaction, and we will report findings annually.

QUALITY SYSTEM REGISTRAR

is the independent company that audits quality systems.

QUALITY MANUAL

states the quality policy and describes the quality system of an organization.

QUALITY AUDIT

is an examination of quality system documentation and records to ensure compliance with ISO 9000

GOAL IV: *To be accountable for overall performance and to determine the continuing suitability of our strategic directions, our effectiveness in moving toward our goals, and our success in completing our individual and unit actions.*

Action 1: We will develop an ongoing — but no less than annual — direction setting and action planning procedure seeking a harmony of interactions between budget preparation, staff appraisal cycles, service imperatives, and recognized opportunities.

Action 2: We will review our committee and team structures at the System level with a view to creating the necessary action oriented teams to achieve our goals and actions.

Action 3: We will assist our service units in developing specifically applicable actions under appropriate goals within ***Taking Aim...***, with the intention of reviewing and renewing such actions annually.

Action 4: We will initiate a universal programme of external quality operations and service audits, consistent with ISO 10011-1:1990, and beginning with an audit of our information technology infrastructure.

GOAL V: *To achieve our goals within organizational structures with a deployment of professional and associate staff, and with the assignment of material resources consistent with our intentions.*

Action 1: We will review the present administrative structure with the intention of reorganizing to reduce the size and cost of administration during a period of severe fiscal restraint.

Action 2: We will review the deployment of staff with the intention of optimizing the allocation of human resources, focusing on areas requiring individualized learner consultation services.

Appendix

Our Resource Requirements

The search for a resourcing strategy which could be associated with ***Taking Aim . . .*** is difficult in a period of uncertainty. Indeed, for over a decade lack of a predictable budgetary environment has been at the root of our considerable frustration. Coincidental with that frustration has been an inconsistency between institutional rhetoric on the importance and centrality of our services, and the budget reality. Planning within this context is a challenge!

The Background

What is the historic picture? **Table 1** below, prepared by the Office of Budget and Statistics, indicates the reality.

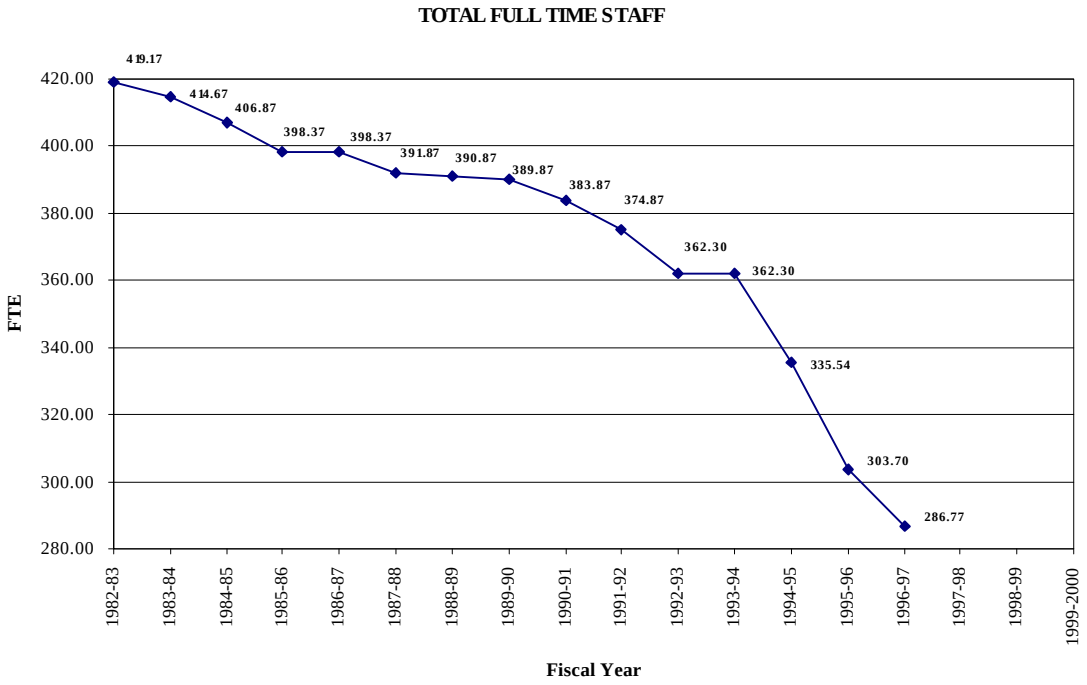
SUMMARY OF BUDGET TAXES

SUMMARY																
	TAXABLE AMOUNT					ACTUAL TAX REALIZED										
Fiscal	Taxable			Total Tax		Academic Salaries		Non-Acad Salaries		Total Salaries			Other	Non-	Total	Tax
Year	Base	Stringency	BAF	%	Amount	F.T.E.	Budget	F.T.E.	Budget	F.T.E.	Budget	Benefits	Salaries	Salaries	Reductions	Amount
1983-84	10,199,907			1.81%	185,000	0.50	12,974	4.00	77,452	4.50	90,426	0	(19,603)	91,359	162,182	185,000
1984-85	14,350,000			2.00%	287,000	2.50	95,777	5.30	82,454	7.80	178,231	19,000	754	92,425	290,410	287,000
1985-86	11,117,000	2.02%		2.02%	224,000	1.50	69,322	7.00	110,460	8.50	179,782	18,000	10,804	13,000	221,586	227,598
1986-87		0.00%		0.00%	0	0.00	0	0.00	0	0.00	0	0	0	0	0	0
1987-88	12,328,000	0.94%	0.82%	1.76%	216,970	2.50	86,638	4.00	91,383	6.50	178,021	24,876	0	15,001	217,898	220,670
1988-89	12,743,000		0.67%	0.67%	84,740	0.00	0	1.00	27,426	1.00	27,426	3,560	0	49,434	80,420	83,470
1989-90	12,953,000		0.50%	0.50%	64,770	1.00	59,858	0.00	0	1.00	59,858	8,980	(6,911)	0	61,927	65,000
1990-91	14,162,402	2.00%	0.50%	2.50%	354,060	4.00	203,896	2.00	45,996	6.00	249,892	19,190	0	58,388	327,470	354,060
1991-92	15,141,943	2.25%		2.25%	340,690	3.00	116,686	6.00	160,812	9.00	277,498	41,625	8,381	0	327,504	345,080
1992-93	15,858,725	2.40%		2.40%	380,610	1.00	43,155	11.57	263,200	12.57	306,355	49,740	1,180	0	357,275	380,625
1993-94	16,845,448	0.00%		0.00%	0	0.00	0	0.00	0	0.00	0	0	0	0	0	0
1994-95	17,250,437	6.00%		6.00%	1,035,030	10.50	381,279	16.26	370,308	26.76	751,587	136,910	0	(5,555)	882,942	1,035,026
1995-96	17,250,437	6.00%		6.00%	1,025,026	2.00	76,448	29.84	701,925	31.84	778,373	147,550	0	(41,141)	884,782	1,025,026
1996-97	17,250,437	3.00%		3.00%	517,515	2.00	66,288	14.93	304,069	16.93	370,357	68,379	0	(1,013)	438,736	517,515
1997-98		0.00%		0.00%	0	0.00	0	0.00	0	0.00	0	0	0	0	0	0
1998-99		0.00%		0.00%	0	0.00	0	0.00	0	0.00	0	0	0	0	0	0
1999-2000		0.00%		0.00%	0	0.00	0	0.00	0	0.00	0	0	0	0	0	0
Total		**24.61%**	**2.49%**	**30.91%**	**4,715,411**	**30.50**	**1,212,321**	**101.90**	**2,235,485**	**132.40**	**3,447,806**	**537,810**	**(5,395)**	**271,898**	**4,253,132**	**4,726,070**

Table 1

By the beginning of the financial year 1996-97, the operating budget would have given up **$4,715,411** to various budget taxes**.** In addition to the impact of such reductions on our ability to allocate resources for materiel (supplies, telecommunications, computing, etc.), it has had dramatic impact on staffing. We have given up **134** positions, reducing our complement from a high in 1993 of 420 FTE positions, to **286** today. (See **Graph 1**.)

Graph 1



In percentage terms, we have absorbed staffing reductions, whether hard -funded or soft- funded positions, far greater than most other academic or administrative units on campus. In terms of the experience of the cohort of research institutions in North America, we have cut deeper and faster than any sister institution. Simply stated, our reductions have been unprecedented in North America.

Such reductions have had predictable impact. We are unable to respond to the varied demands of our diverse communities of learners, whether those demands relate to hours of opening, learner services, maintenance of traditional print collections, access to emerging technologies and electronic products, etc. etc. We are frustrated by this inability. We wish we could do more, but we also wish that the institution's awareness and memory understood the growing imbalance of resources against expectations.

Having said this, it is important to emphasize that we have thus far responded to these reductions in innovative ways. Our responses have been award winning, and the above cohort of sister institutions are emulating our ground-breaking initiatives. We are leaders in innovation, whether in terms of applying technologies to offset resource deficiencies, or in terms of enhancing work procedures. In this latter capacity, for example, our outsourcing initiatives are internationally renowned.

Within this context, what might be a realistic expectation as to our resourcing requirements? We would frame these within our three traditional categories -- operational requirements, information resource requirements, and capital requirements.

Operational Requirements

Understanding the magnitude of the reductions outlined above, we believe there are few obvious measures which would yield substantive additional cost reductions without massive prejudice to services. We believe staff have risen to the challenge of 'doing more with less'; but, we are experiencing the inevitable results: these include, a heightening of stress levels and a waning commitment to the institution. We appreciate that these factors are being experienced by many units on campus, but nonetheless they are of concern to us. We must now, at the very least, stabilize at no less than current levels, both in terms of staffing and in terms of other discretionary budget categories. Indeed, with particular reference to the staffing situation, we must achieve some significant element of renewal, both in quantitative and qualitative terms.

We remind the University of the words of the external review committee charged with responding to the 1991 PACCR recommendations:

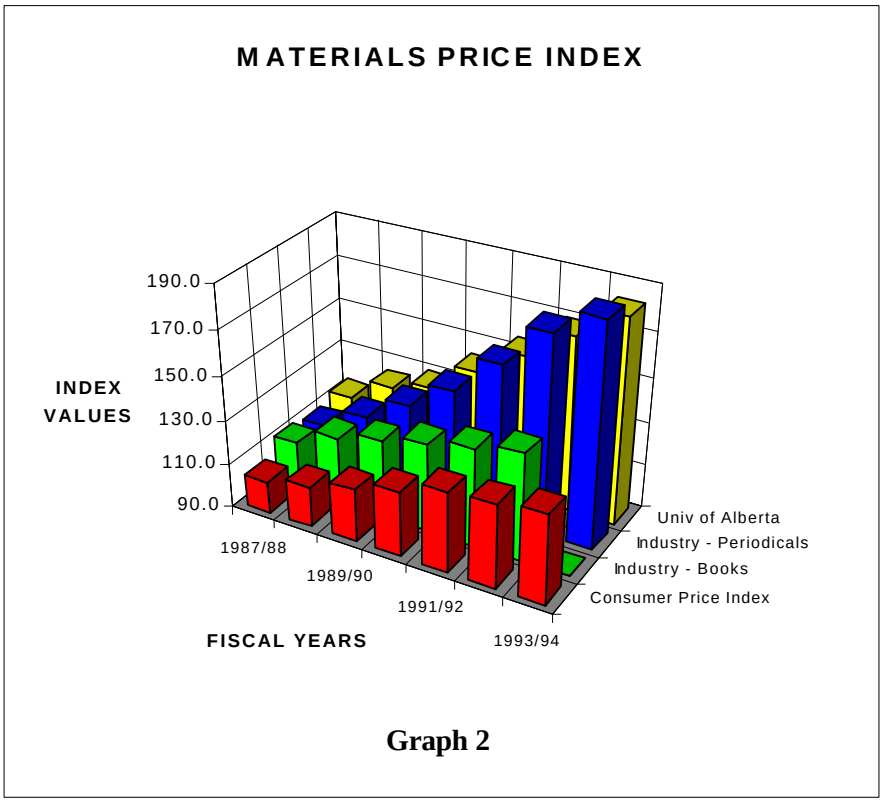
> If the Library is to continue to provide services at the level demanded by an institution which has a declared objective of increasing the level of graduate study and research, this trend (reductions) cannot continue . . . the University must recognize the debilitating effect of over a decade of financial restraint and work towards the establishment of a responsible, realistic and stable budgetary environment. (President's Unit Review Committee Report, pp. 25-26)

That was then, and this is now, but we suggest to the University that if we are to make progress in achieving the directions and goals we have set forth in ***Taking Aim* . . .** we must find the means to attract bright new professionals, and we must reinvigorate our non-academic staff complement with additional positions. We estimate our requirement to be **two professional positions** returned to the complement (or alternatively not eliminated in the budget reductions of financial year 1996-97), as well as a similar action for **fifteen non-academic positions**.

Information Resource Requirements

Despite the proliferation of electronic media and information sources in recent years, the bulk of academic publishing and information transfer remains, now and for the foreseeable future, in the traditional form of printed books and journals. Our need to maintain adequate collections of printed materials is only reinforced by our efforts to supplement local ownership of books and journals with distant access and document-delivery, because sharing resources with other institutions is a two-way obligation that requires us to stock and share desirable titles in return.

The pricing of scholarly books and journals is highly volatile, and for more than a decade inflation of these prices has far outpaced both the consumer price index and the materials budget. (See **Graph 2**: Materials Price Index.) The reasons for this are complex, but not the least has been the increasing concentration of scholarly journal publishing in the hands of a small number of (primarily) European publishers. With *sui generis* products such as books and journals, there is little or no free-market competition; with no substitute products available, the only exercise of choice is whether to buy at all.



Graph 2

Table 2 illustrates the gap between subscription costs[1] and subscription budgets over the past five years, as seven out of every ten disciplines saw price increases in excess of 40% between 1991 and 1995. Year-to-year rate increases continue to be volatile. A comparison of the 1994 average costs with the 1995 data shows the dynamic nature of the marketplace. For example, Math and Computer Science titles increased at the fourth highest rate in 1994; for 1995, they had one of the lowest rates of increase.

Botany titles were in the lower half of the table in 1994 but have moved to third place in 1995. The instability of this list suggests that complex forces drive the various segments of the serials market in any given year, making it virtually impossible to determine in advance precisely what prices will do in a given discipline.

Table 2: COST HISTORY BY SUBJECT

	Average Cost Per Title (in U.S. dollars)					91-95
Subject	1991	1992	1993	1994	1995	% Chg
Agriculture	$221.06	$233.13	$270.85	$284.78	$316.45	43.15
Anthropology	109.01	118.80	127.57	139.65	156.45	43.52
Biology	462.61	487.11	561.74	579.79	646.96	39.85
Botany	346.43	364.98	438.66	444.69	503.20	45.25
Business & Economics	159.76	174.88	198.60	213.44	247.35	54.83
Chemistry	678.57	806.66	916.54	923.42	1,020.00	50.32
Education	97.53	104.42	121.99	127.35	138.91	42.43
Engineering	384.37	440.82	492.86	534.42	585.37	52.29
General Science	234.29	264.80	318.35	341.36	382.69	63.34
Health Sciences	281.40	307.53	345.57	361.87	401.28	42.60
History	62.41	68.72	73.04	78.04	85.49	36.98
Language and Literature	59.00	62.52	67.39	68.89	77.00	30.51
Law	71.15	79.68	88.49	90.38	97.33	36.80
Math and Computer Science	433.92	473.07	527.78	582.64	637.36	46.88
Music	45.66	49.77	54.22	54.24	58.87	28.93
Physics	744.92	846.84	987.04	1,009.56	1,126.50	51.22
Political Science	96.85	104.12	118.91	124.93	141.20	45.79
Psychology	125.00	140.30	154.36	169.84	189.99	51.99
Technology	355.94	385.94	436.48	479.57	536.64	50.77
Zoology	342.36	367.65	419.29	441.85	498.36	45.57

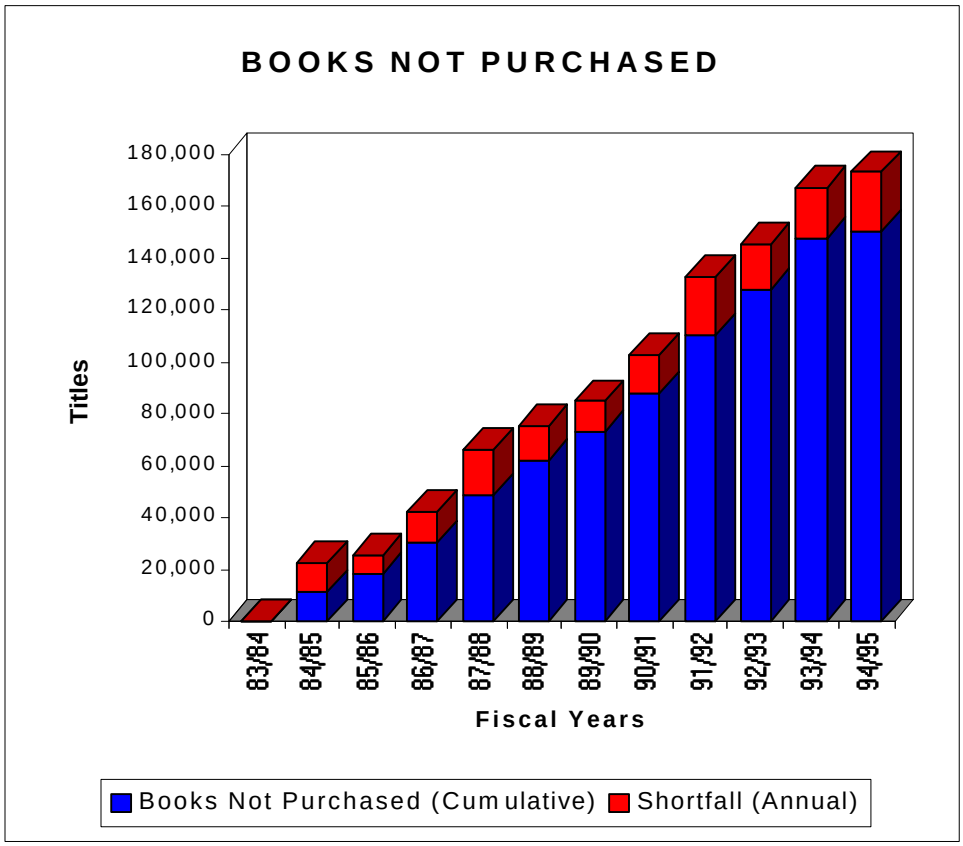
Book pricing is also volatile. Over the past five years, for instance, annual price increases have varied from less than 2% to a high of more than 13% according to the Blackwell North America survey[2]. (Prices expressed in U.S. dollars.)

Table 3: BOOK PRICES

	June 1991	June 1992	June 1993	June 1994	June 1995	91-95 % Change
All books	**$45.63**	**$51.32**	**$52.26**	**$53.05**	**$53.19**	
(% increase)	**4.6 %**	**12.5 %**	**1.8 %**	**1.5 %**	**0.3 %**	**16.6 %**
U.S. origin	**$38.32**	**$42.25**	**$42.55**	**$43.82**	**$44.88**	
(% increase)	**4.0 %**	**10.3 %**	**0.7 %**	**3.0 %**	**2.4 %**	**17.1 %**
U.K. origin	**$52.76**	**$58.50**	**$60.39**	**$57.42**	**$58.05**	
(% increase)	**8.1 %**	**10.9 %**	**3.2 %**	**-4.9 %**	**1.1 %**	**10.0 %**
Other origin	**$73.86**	**$82.20**	**$93.36**	**$91.63**	**$85.10**	
(% increase)	**3.2 %**	**11.3 %**	**13.6 %**	**-1.9 %**	**-8.1 %**	**15.2 %**

1 *Periodical Price Survey 1995*, © Library Journal, April 15, 1995.
2 *Approval Plan Coverage and Cost Study*, 1994/95, © Blackwell North America, 1995

The buying power of materials budgets has been further eroded by the vicissitudes of foreign exchange rates. Approximately 90% of purchases are sourced outside Canada's borders, and must be paid for in foreign currencies or their equivalent exchange value. Thus, each current slip of a single percentage point by the Canadian dollar against the major foreign currencies deprives us of approximately $65,000 in purchasing power. The result of purchasing power lost through this combination of price inflation and foreign exchange has been a cumulative loss of more than 150,000 monographic titles since 1983-84 (see **Graph 3**: Books Not Purchased and **Table 4**), as well as the cancellation to date of 4,443 journal subscriptions, with more and more cancellations each year.



Graph 3

	88/89	89/90	90/91	91/92	92/93	93-94	94-95
Base (1983/84)	42,915	42,915	42,915	42,915	42,915	42,915	42,915
Books Purchased	29,483	31,462	28,107	20,383	25,520	23,340	20,292
Shortfall (Annual)	13,432	11,453	14,808	22,532	17,395	19,575	22,623
Books Not Purchased (Cumulative)	61,771	73,224	88,032	110,564	127,959	147,534	150,582

Table 4

Meanwhile, the proliferation of new information sources and services in electronic form has created an additional claim against the materials budget, which must compete for available dollars with book and journal expenditures. Only rarely, however, does one of these new, electronic sources provide a replacement product that allows us to cancel the subscription to a paper-based equivalent. Generally speaking, the increasing development of electronic materials is no panacea for the scholarly publishing problem. More realistically, we can expect that these digital materials and the new technologies associated with them will bring new hazards and unforeseen additional costs.

Although the University Administration has been unable to provide full indexation of the materials budget, it has made every effort -- especially commendable in light of its budgetary situation -- to augment the budget annually. While these base budget augmentations have not been sufficient to allow us to keep pace with materials' price inflation, this is a situation common to academic institutions everywhere, and one that is being addressed by means outlined elsewhere in ***Taking Aim....***

Industry price projections for the current fiscal year, 1995-96, just to cite one example, forecast an 8.5% overall average increase in book prices (to an average $62.59 per title) and a 15% increase in periodicals prices (to an average $367.94 per title). Against these projected inflationary increases of $787,000 ($187,000 for books, and $600,000 for journals), the materials budget was increased by $500,000. The potential shortfall of $287,000, if not made up from other funding sources, must necessarily translate into 4,585 potential books not purchased, 780 subscriptions cancelled, or -- more likely -- a mixture of both. This is the situation we have been facing, and which we must reverse, if we are to maintain our obligations to the academic enterprise.

Projecting price inflation and foreign exchange rates involves more art than science, however, the trends set by book and journal pricing over the past two decades offer little hope that the current (and past) scenarios will not be repeated, and therefore we must assume that we will face annual materials budget deficits on the order of magnitude of $600,000 to $900,000 for (at least) the next five years. While we cannot realistically expect University Administration to provide new funding sufficient to cover each year's entire bill, we do require some assurance that some significant percentage of these additional costs will be covered. The viability and credibility of the University's role as a research-intensive full-service university depends upon its ability and willingness to make such a commitment.

Capital Requirements

There is no question that information technologies will be at the heart of the information infrastructure. In this regard we see an even greater challenge in the area of capital renewal and enhancement than we will have in our operations or information resource requirements.

Four factors will drive the need for major capital investment:

- the rising expectations of the learner for information services and resources at the desktop;
- the emergence of client server computing for information systems;
- the demand for ubiquitous connectivity for learners in the new learning environment;
- the demand, and potential, to build substantial new value into the existing service model based on the concepts of the individualized information environment.

The Learning Network

In 1991, we were among the first units on campus to implement local area network connectivity to provide office productivity applications and terminal access to The Gate. As a result, this generation of PCs has reached the end of its useful lifespan. The concept of the local area network has shifted from one of standalone office PCs to which communications connectivity has been added, to one in which the desktop PC functions as a powerful graphical network station from which learners expect to access an array of information and learning services.

What is the impact? Over the next 2-3 years we must implement a strategy to replace an inventory of 550 obsolete personal computers with machines capable of handling multimedia network services. At the same time, we must anticipate upgrading of network hubs to accommodate the growth in network traffic resulting from multimedia data.

The Gate Moves to Client-Server

Improvements in the price-performance of computing hardware, and advances in software development, are now driving the transition of mainframe-based integrated systems to a distributed architecture of specialized database and document/image servers on the client-server model. This reflects the directions of the global INTERNET. Our collection's databases will become simply one server of many in the typical information resource environment.

Data Research Associates (DRA), our system vendor, has announced its intention to migrate fully to a client-server architecture by the end of 1996. While this software migration is included in our ongoing contract with DRA, it will require hardware replacement of the legacy VAX/VMS hardware, and drives the need for graphical workstations not only for the public catalogue, but technical processing and circulation functions.

At the same time, we must invest in server infrastructure to support new information services which enhance the local catalogue -- i.e. journal citation databases, numerical data banks, document and image servers, and specialized fax/communications/print servers for document delivery. These services are integral to our commitment to consortium activities, is the replacement of site-restricted CD-ROM services with INTERNET-accessible services demanded by the remote access requirements of alternative delivery.

The Move to Ubiquitous Connectivity

The University's vision of a learning environment, which supports a range of innovative teaching resources and delivery methods, demands major investment in technology infrastructure. The transition from plugged modem pools, crowded computer labs, and blackboard classrooms to a wired campus where each learner has personal computing and connectivity will not happen overnight.

We can play a significant 'bridge' role in the evolution of the campus study environment, by providing, through our study facilities, basic log-in capability for the computer equipped student. Within three years we should be able to offer full 'plug-and-play' connectivity in a graphical environment to the resources of the campus network from the student's own portable PC.

The Personal and Independent Information Environment

Taking Aim . . . highlights the movement from generic or 'class-based' service policies, to information service which can be tailored to the preferences of the individual learner. The development of individualized services extends from the front-end presentation through to end products such as printing on demand, and information delivery to the desktop. The move to unmediated user services liberates learners from dependence on staff intervention for routine activities such as the circulation of materials, and this permits the reallocation of scarce human resources to services where they will contribute greater value to the learner.

To put these services in place will call for an investment to exploit the capabilities of the University One-Card, ATM-style checkout technologies, and software development to create innovative bridges between existing facilities or resources (for example student record files, sophisticated network printing systems, authentication services) and information products and services.

The following summarizes the capital requirement for developing an infrastructure renewal strategy, and identifies the priority needs by which we will implement our information technology strategic directions.

First Priority			
	General Operations		$216,500.00
	Public Printing (assume revenue recovery)		$78,000.00
	Circulation Self-Checkout		$203,000.00
	Intellidoc		$117,800.00
	Cameron Training Area		$60,000.00
		First Priority TOTAL:	**$675,300.00**
Second Priority			**$458,500.00**

The Need for Capital Replacement and Enhancement

Over the past five years, a large portion of the Library capital budget has been allocated to building its PC and network infrastructure. Over 95% of our PC inventory has been acquired since 1991/92. Of the remaining original PCs purchased since the mid-1980s, almost 50% (Sanyo PC XTs) are still in service as circulation check-out stations. Consequently, the Library has been "sheltered" from significant machine replacement costs.

550	PC Workstations (5 year replacement)		$1,375,000.00
12	LAN Servers (3 year replacement)		$65,000.00
4	UNIX Servers (5 year replacement)		$225,000.00
575	Network Concentrator Ports (7 year replacement)		$40,000.00
1	DRA VAX hardware (5 year replacement)		$650,000.00
		TOTAL:	$2,355,000.00
Recommended annual replacement fund allocation based on average 5 year replacement:			**$471,000.00**

In 1995/96 the Library must begin a program of routine replacement. In a distributed computing environment, ongoing replacement of parts of the system is required, as opposed to a single total replacement as was done with mainframe or integrated systems.

The first generation of network-capable 386/40 PCs (120 machines) purchased in 1992 are reaching obsolescence and should be replaced over the next 2 years. This should be done by selective reallocation of new machines, for which we recommend the industry standard Pentium 90 desktop PC. The 35 PC XT's in Circulation are almost 8 years old and require urgent replacement. The Library's first generation file servers are between 3 and 5 years old. All are less powerful than current workstation standards and should be replaced over the next 2 years as well. Failure to replace aging equipment results in repair costs and downtime that are more costly than capital replacement. Regular replacement permits "graceful" reallocation of equipment, which allows the most cost-effective allocation of equipment to specific needs.

1. General Operations

35	Replace Sanyo XT Circulation CheckOut stations	$94,500.00
4	File Server Upgrades - ITS, Sci, Scott, HSS (reallocated to Intellidoc, P-Mail, Remote access)	$36,000.00
10	File Server Memory upgrades , FSJ and BARD backup tape drives	$12,800.00
1	Backup Power Supply (UPS) for OVID and ERL Servers	$6,000.00
1	Hard Disk Storage for COPPUL ERL Server	$4,400.00
	Memory Upgrade for Library Sun WEB Server	$2,500.00
12	CD ROM station network connections for remaining public stations	$3,400.00
	PC Software Contingency Fund (for PAC station and CD ROM menu setups etc.)	$12,000.00
	ITS Computer Room - network connections and power for additional servers, bench area, Intellidoc (NOTE: Need pricing on additional cooling for Computer Room for Intellidoc and One-Card)	$3,400.00
1	VAX Memory Upgrade (if we don't do Alpha Upgrade)	$18,000.00
5	Coutts CD ROM Station Upgrades	$13,5002.00
	48-port concentrators for Cameron Commons?	$10,000.00
	Total:	$216,500.00

2. Public Printing for PAC, OVID, CD ROM, E-Reserve

Public Printing Capability in Unit Libraries: HSS, Law, Coutts, SciTech, FSJ, PMC, SCOLL, Scott , Winspear

10	Print Servers (using older 386s - see under 386 replacements)	$27,000.00
10	HP Laserjet 4 printers	$30,000.00
10	Cabling	$3,000.00
10	One-Card Attachments for Printers (guestimate)	$1,800.00
	Total:	$78,000.00

3. Circulation Self-Checkout

10	Self Serve Circulation Stations (HSS 3, Scott 1, Cameron 3, Coutts 1, Law 1, FSJ 1)	$200,000.00
10	Ethernet connections	$3,000.00
	Total:	$203,000.00

4. Intellidoc

1	SMP Intellidoc Server	$25,000.00
1	Win NT Fax Server (use replaced ITS Server)	$0.00
1	Win NT Communications Server (use replaced HSS server)	$0.00
3	Intellidoc Scanning Stations (Cameron ILL, HSS, Scott)	$75,000.00
	Ariel Scanning Stations to support Intellidoc doc delivery and Reserve Room scanning	
2	P90 workstations	$5,400.00
2	HP 2CX Scanners	$3,400.00
1	Netscape Commerce Server for One-Card print charge processing	$5,000.00
1	General Meters API License	$4,000.00
	Total:	$117,800.00

5. Cameron Training Area

20	P90 workstations (reallocated to 488 desktops in ITS, FSA)	$54,000.00
20	Network connections	$6,000.00
	Total:	$60,000.00

6. Second Priority

75	Replace remaining 386/40 desktop PCs for reallocation to Cameron Info Commons	$202,500.00
1	Additional campus network connection for Info Commons	$8,000.00
5	Large screen student viewing stations for E-Reserve Areas (Intellidoc)	$22,500.00
70	PAC station upgrades for remaining terminals for graphical interface	$45,050.00
1	Alpha Upgrade for VAX	$130,000.00
	Windows 95/MS Office 95 upgrades	$31,050.00
1	Library Network Remote Access Server	$2,400.00
1	CD-ROM 7-drive Tower for Central LIbrary LAN in ITS	$5,000.00
1	LCD Projector for Classrooms/Labs/Training Presentations	$12,000.00
	Total:	$458,500.00

Our Resourcing Options

We have few options in terms of fulfilling our operational, information resource or capital requirements other than access to the University's own operating and capital budget mechanisms. We do not enjoy a pro-ration of tuition revenues as do the teaching faculties in terms of additional learners; although, we do enjoy some pro-ration of research grant and contract revenues -- the latter expected to increase if the current aggressive campaign of the Vice-President (Research and External Affairs) is successful.

We see some potential here for independent revenue generation, and have developed a 'Strategic Direction' with 'Goals' and 'Actions' within ***Taking Aim . . .*** which speak to this potential. In terms of enhancing our services to on-campus learners, we see the need and the possibilities of creating value-added services which could be self-sustaining in terms of a revenue stream. We recognize, however, that we must take care in deciding what information or information services should and will remain 'free', and what new information products or services will be 'billable' to a member of the University community, whether faculty, graduate, or undergraduate learner.

It is important to note, also, that we do see revenue potential in services which could be and should be provided to the broader community -- but at a fee, or under contract. It is for this reason that we created **University Information Enterprises**, and have been aggressive in identifying initiatives which could have revenue potential.

We hope, moreover, that some component of our aggregate need for capital renewal and enhancement, particularly in the area of information technology, will come from the forthcoming Development Campaign. As yet, however, there has been no indication of what access we might have to the Campaign's programme objectives, its donor base, etc.

In summary, while we are prepared to be aggressive and innovative in identifying and introducing alternate revenue streams, the University must understand that, at best, the budgetary impact of these streams will always be at the margin.