

Speculating about the Future
of the University of the 21st Century
...for a 21st Century University

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Mr. Chancellor, Mr. President, graduates, families, friends, and faculty...

I am deeply honored to receive this recognition from Royal Roads University and to be invited to speak to its graduating class. Over the years I've presided over many such convocations, and I know well the effort and sacrifice it takes to earn these advanced degrees, particularly when one is also meeting career and family responsibilities.

There is an old saying from south of the border—far south of the border, in fact, in southwest Texas—that if you are driving down a country road and you see a turtle balanced on the top of a fence post, you know that critter had to have some help to get up there. And so it is with today's graduates, since so many in this audience today have provided the support and encouragement, as family and friends. This is also your day to celebrate and be acknowledged.

Beyond the honor, I should confess that I was also looking forward to this visit with considerable curiosity. You see, for the past two decades I have attempted to lead an effort to transform one of the largest public universities in the United States from a 20th Century (although some would even suggest 19th Century) university into a 21st Century University. This has been challenging, indeed, for I have suggested that a university capable of serving our new century would have some quite different characteristics:

- Learner centered rather than faculty centered
- Affordable, cost-effective, and increasingly supported by the private marketplace
- Stressing lifelong learning, with extensive opportunities for adults
- Providing learning environments more compatible with lifestyles and career needs
- Serving global rather than merely regional markets
- Utilizing technology to provide anytime-anywhere learning opportunities
- Stressing highly customized learning experiences tailored to a diverse clientele
- Capable of rapid evolution to serve a rapidly changing world

Not surprisingly, my effort to lead such a transformation in a traditional university was at times frustrating indeed. It is sometimes said that universities change one faculty grave at a time. However I prefer to think of the contemporary U.S. university as a fragile academic organism, delicately balanced between the university hospital on one end of the campus, and the football team on the other. Since the

University of Michigan's hospitals treat over one million patients a year, and our football stadium seats 111,000 fans each weekend in the fall, the forces constraining change at Michigan are formidable indeed.

Yet the characteristics I have suggested for a university for the new century are precisely those of your university. Royal Roads University has demonstrated that it takes less than a decade to build a 21st Century university, albeit on a very green field with the very visionary leadership of your founding president, Gerry Kelly, your governing board, and the Royal Roads team!

Of course, most of the forces that have shaped the creation and evolution of Royal Roads University will also shape the career of you as its graduates.

A Changing World

Clearly we live in a time of very rapid and profound social transformation, a transition from a century in which the dominant human activity was transportation to one in which communications has become paramount, from economies based upon cars, planes, and trains to one dependent upon computers and networks. We are shifting from an emphasis on creating and transporting physical objects such as materials and energy to knowledge itself, from atoms to bits, if you will; from societies based upon the geopolitics of the nation-state to those based on diverse cultures and local traditions; and from a dependence on government policy to an increasing confidence in the marketplace to establish public priorities.

More fundamentally, today we are evolving rapidly into a post-industrial, knowledge-based society, a shift in culture and technology as profound as the shift that took place a century ago when our agrarian societies evolved into industrial nations.¹ Industrial production is steadily shifting from material- and labor-intensive products and processes to knowledge-intensive products. A radically new system for creating wealth has evolved that depends upon the creation and application of new knowledge. In a very real sense, we are entering a new age, an age of knowledge, in which the key strategic resource necessary for prosperity has become knowledge itself, that is, educated people and their ideas.² Unlike natural resources such as iron and oil that have driven earlier economic transformations, knowledge is inexhaustible. The more it is used, the more it multiplies and expands.

Yet knowledge can be created, absorbed, and applied only by the educated mind. Hence schools in general and universities in particular will play increasingly important roles as our societies enter this new age. Today, a college degree has become a necessity

for most careers, and graduate education desirable for an increasing number. The increased blurring of the various stages of learning throughout one's lifetime—K-12, undergraduate, graduate, professional, job training, career shifting, lifelong enrichment—will require a far greater coordination and perhaps even a merger of various elements of our educational infrastructure. We are shifting from “just-in-case” education, based on degree-based programs early in one's life, to “just-in-time” education, where knowledge and skills are obtained during a career, to “just-for-you” educational services, customized to the needs of the student. As a result, the student is evolving into an active learner and increasingly a demanding consumer of educational services.

This transformation into a knowledge-driven society is being driven, in part, by modern digital technologies such as computers, telecommunications, and networks that are reshaping both our society and our social institutions. These technologies have increased vastly our capacity to know and to do things and to communicate and collaborate with others. They allow us to transmit information quickly and widely, linking distant places and diverse areas of endeavor in productive new ways. They allow us to form and sustain communities for work, play, and learning in ways unimaginable just a decade ago. Yet, while information technology has the capacity to enhance and enrich teaching and scholarship, it also poses certain threats to our colleges and universities. We can now use powerful computers and networks to deliver educational services to anyone, at anyplace and anytime, no longer confined to the campus or the academic schedule, as Royal Roads University has demonstrated so profoundly. Technology is creating an open learning environment in which the student has evolved into an active learner and consumer of educational services, stimulating the growth of powerful market forces that could dramatically reshape the higher education enterprise.

The weakening influence of traditional regulations and the emergence of new competitive forces, driven by changing societal needs, economic realities, and technology, are likely to drive a massive restructuring of the higher education enterprise. More generally, we may well be seeing the early stages of the appearance of a global knowledge and learning industry, in which the activities of traditional academic institutions converge with other knowledge-intensive organizations such as telecommunications, entertainment, and information service companies.³

Yet there are two other themes of change that I believe will be particularly important to the futures of today's graduates, and which have provided Royal Roads University with a remarkable opportunity for leadership. The first is the increasing

importance of diversity in higher education, driven by the dramatic changes occurring in the populations served by our universities and affecting all of the characteristics of our institutions: their academic programs, their broader roles in our society, and their aspirations for excellence.

In many developed nations, demographic change is first thought of in terms of the aging of our populations. Over the next several decades, the percentage of the population over the age of 60 will grow from 15% to 20% to over 30% to 40% in the United States, Europe, and parts of Asia. Already we are feeling the consequences, as our national priorities increasingly focusing on the concerns of the elderly (e.g., health care) rather than the needs of the young (e.g., education). Yet on a global basis, half of the world's population is under the age of twenty, with over two billion teenagers on planet Earth, most living in Asia, Africa, and Latin America. Their demand for education will be staggering.

An equally profound demographic phenomenon is the increasing diversity of many of our nations with respect to race, ethnicity, and nationality. For example, in the United States today, women, minorities, and immigrants now account for roughly 85 percent of the growth in the labor force, currently representing 60 percent of all of our nation's workers. Those groups we refer to as minorities—African, Hispanic, Asian, and Native Americans—have already become the majority population in states such as California, Arizona, and Texas. By the late twenty-first century, the United States will become a nation of minorities, without a majority ethnic group. Moreover, women have already become the predominant gender in our nation and our educational institutions (currently comprising over 60% of our enrollments), and are rapidly assuming leadership roles in both the public and private sector.

The full participation of currently underrepresented minorities and women is crucial to our commitment to equity and social justice, as well as to the future strength and prosperity of our societies. As both a leader of society at large and a reflection of that society, the university has a unique responsibility to develop effective models of multicultural, pluralistic communities. We must should to achieve new levels of understanding, tolerance, and mutual fulfillment for peoples of diverse racial and cultural backgrounds both on our campuses and beyond.

My final theme—and yet another important mission for Royal Rhodes—is global sustainability. This seems a particularly appropriate topic this fall in the wake of the United Nations Global Summit on Sustainable Development in Johannesburg. As a scientist, I am convinced that there is compelling evidence that the growing population and invasive activities of humankind are now altering the fragile balance of our planet.

The concerns are both multiplying in number and intensifying in severity: the destruction of forests, wetlands, and other natural habitats by human activities leading to the extinction of millions of biological species and the loss of biodiversity; the buildup of greenhouse gases such as carbon dioxide and their possible impact on global climates; the pollution of our air, water, and land.

With the world population now at 6 billion, we are already consuming 40 percent of the world's photosynthetic energy production.⁴ Current estimates place a stable world population at 8 to 10 billion by the late twenty-first century, assuming fertility rates continue to fall over the next several decades. Yet even at this reduced rate of population growth, we will eventually consume all of the planet's resources unless we take action. Depending on the criteria used, it is estimated that already from one-eighth to one-quarter of the world's people are malnourished. Some 14 million children starve to death each year. It could well be that coming to grips with the impact of our species on our planet, learning to live in a sustainable fashion on Spaceship Earth, will become the greatest challenge of all to our generation. We must find new ways to provide for a human society that presently has outstripped the limits of global sustainability.

This will be particularly difficult for the United States, a nation that has difficulty in looking more than a generation ahead, encumbered by a political process that generally functions on an election-by-election basis (and a capital market that functions from one quarterly earnings statement to the next), as the current debate over global change makes all too apparent. With just 4.5% of the world's people, we control 25% of its wealth and produce 25% to 30% of its pollution. It is remarkable that the richest nation on earth is the lowest per capita donor of international development assistance of any industrialized country.

Ironically, the tragic events of September 11m 2001 might be viewed as a wake-up call, if we view these terrorist attacks not simply as a brief and brutal criminal attack but rather the consequence of more fundamental causes. As the noted biologist Peter Raven put it in a recent address⁵

"The United States is a small part of a very large, poor, and rapidly changing world, and we, along with everyone else, must do a better job. Globalization appears to have become an irresistible force, but we must make it participatory and humane to alleviate the suffering of the world's poorest people and the effective disenfranchisement of many of its nations. As many have stated in the context of the current world situation, the best defense against terrorism is an educated people. Education, which promises to each individual the opportunity

to express their individual talents fully, is fundamental to building a peaceful world. Moreover, it is against our common interests that hundreds of millions of women and children, living in extreme poverty, are unable to make the best use of their abilities. Such discrimination, whether we focus on it or not, is morally abhorrent.”

There are 30 million people in the world today who are fully qualified to enter a university but for whom no university place is available. With a decade there will be 100 million of these university-ready people. Most will be in Asia, but many will be in Latin America and Africa, with significant numbers in Europe and even in the U.S. Along with many “lifelong learners”, also poorly provided with higher education and advanced training, they will be demanding access to advanced professional skills in an emerging global knowledge economy.

Yet as Sir John Daniels, former head of the British Open University notes, in most of the world, higher education is mired in a crisis of access, cost, and flexibility. Unless we can address and solve this crisis, billions of people in coming generations will be denied the education so necessary to compete in, indeed to survive in, an age of knowledge. Here we must realize that the wealthy nations of the world have a particularly important role to play to assist developing nations in building the educational systems to meet their exploding needs.

Yet the university models characterizing most developed nations seem ill-suited to guiding us out of this global education crisis. Most of our colleges and universities continue to be focused on high-cost, low-technology, residential education and on the outmoded idea that quality in education is linked to exclusivity of access and extravagance of resources. Our current concept of the campus-based university could well deny higher education to nearly all of the billions of young people who will require it in the decades ahead.

It is here that Royal Roads University has firmly established itself as the alternative model of an institution capable of serving not just its geographical region but, indeed, the world itself. The fact that roughly one-third of the graduates in attendance at this convocation are from Asia is strong evidence of the global nature of the Royal Roads paradigm.

These social, economic, technological, and market forces are far more powerful than many realize. A rapidly evolving world has demanded profound and permanent change in most, if not all, social institutions. Corporations have undergone restructuring and reengineering. Governments and other public bodies are being overhauled,

streamlined, and made more responsive. Even the relevance of the nation-state being questioned and re-examined in a world in which societies are more inclined to embrace their cultures and traditions than the policies of their governments. History suggests that the university, too, must change and adapt in part to preserve its ancient values and traditional roles. The status quo is no longer an option.

Once we accept that change is inevitable, we can use it as a strategic opportunity to control our destiny, while preserving the most important of our values and our traditions. Your founding president, Gerry Kelly, has demonstrated that creative, visionary leaders can tap the energy created by threats such as the emerging for-profit marketplace and technology to lead their institutions in new directions that will reinforce and enhance their most important roles and values.

It is true that Royal Roads University is still very young. Indeed, even my own institution, the University of Michigan, is only 185 years old—rather young, at least compared to the thousand years the university has benefited our civilization as a social institution where both the young and the experienced could acquire not only knowledge and skills but as well the values and disciplines of the educated mind. Throughout this long history universities have defended and propagated our cultural and intellectual heritage, while challenging our society's norms and beliefs. They have produced the leaders of our governments, our commerce and our professions. They have created and applied new knowledge to serve our society, and they have done so while preserving the values and the principles so essential to academic learning: freedom of inquiry, an openness to new ideas, a commitment to rigorous study and a love for learning.

Clearly, in an age of knowledge, higher education will flourish in the decades ahead. In a knowledge-intensive society the need for advanced education and knowledge will become ever more pressing, both for individuals and for our societies more broadly. Yet, it is also likely that the university as we know it today, or rather the current constellation of diverse institutions that comprise the higher education enterprise, will change in profound ways to serve a changing world. But of course, this is just as the university has done so many times in the past. Only a concerted effort to understand the important traditions of the past, the challenges of the present, and the possibilities for the future can enable institutions to thrive during a time of such change.

There is a certain irony in the timing of my remarks today. Two weeks from today, I will be addressing the faculty of another Canadian university, the University of Toronto, to convey a hearty “Happy Birthday” on the 175th anniversary of its charter, from its sister university south of the border, the University of Michigan. As we discuss the future of higher education in a global, knowledge drive economy, you can rest

assured that I will tell your colleagues at Toronto that I have already seen the future of higher education, and it is here in Victoria, at Royal Roads University!

Congratulations to all of today's graduates, and congratulations to Royal Roads University for demonstrating a new vision for the university of the 21st Century!

¹ Peter F. Drucker, "The Age of Social Transformation," *Atlantic Monthly*, November 1994, 53–80; Peter F. Drucker, *Post-capitalist Society* (New York: Harper Collins, 1993).

² Erich Bloch, National Science Foundation, testimony to Congress, 1988.

³ Marvin W. Peterson and David D. Dill, "Understanding the Competitive Environment of the Postsecondary Knowledge Industry", in *Planning and Management for a Changing Environment*, edited by Marvin W. Peterson, David D. Dill, and Lisa A. Mets (San Francisco: Jossey-Bass Publishers, 1997) pp. 3-29.

⁴ Donald E. Osterbrock and Peter H. Raven, eds., *Origins and Extinctions* (New Haven: Yale University Press, 1992).

⁵ Peter H. Raven, "Science, Sustainability, and the Human Prospect", *Science* Vol 297, August 9, 2002, pp. 954-958