

# Music for the Soul: The Role of the University in the Information Society

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What the United States does best is to understand itself. What it does worst is understand others.

--Carlos Fuentes *Time* (London, June 16, 1986).

I begin with this caution from Carlos Fuentes, because his observation applies to me. Having been on the faculties of several U.S. universities, I understand the role of the university in the United States. But, I am cautious in extending these lessons beyond my borders. I ask your indulgence in my observations.

In 1962, the great economist of information studies, Fritz Machlup, observed a social transformation others had failed to notice:

(The) organization of production, trade, and government seems to require an increasing degree of division of labor between knowledge production and physical production. A quite remarkable increase in the division of labor between 'brain work' and largely physical performance has occurred in all sectors of our economic and social organization.

--Fritz Machlup (1962). The production and distribution of knowledge in the United States. Princeton, NJ, Princeton University Press, p. 6.

What Machlup could not have foreseen, was the transformation of the world's economy according to the divisions of labor he observed; because, in 1962, there was no single information network that integrated all of the world's other telecommunications networks into an Internet.

Consequently, to understand the role of the university in the information society, I will quickly review the 5 social forces that created the information society itself. I will draw upon a book I wrote some years ago, titled, *Tendencies and Tensions of the Information Age*.

1. The idea of information. The fundamental condition that makes the information society understandable is the ease with which people think of information as a thing, and manipulate it as a commodity.

As a result, the products of the university, once understood as social standing, art, culture, scientific progress, and education, for example, are now understood as related elements of an over-arching concept we call information.

2. The information economy. Information holds a leading role in economic life as an item of production and consumption. Status within the world's economic system now depends on the ability to compete in markets for information and information technologies. The growing importance of information in economic relations is among the most powerful causal and defining forces in the information society.

As a result, universities have emerged as major producers of this fundamental asset.

3. Information work. The emergence of a new work sector in the course of the 20th century has altered both the reality and the popular perception of the experience of work in the 21st century.

In many countries the majority of adults now work in occupations whose primary tasks involve manipulating information in some form.

And, it is to this sector of the labor force, that universities primarily contribute.

4. Interconnectedness. Over and above the level of the individual, the information technologies of organization, create the basis for complex organizations where the need to cope with uncertainty--and the potential for innovation--leads to the establishment of networked information systems and communication channels.

Thus, as a world-wide information society evolves, the academic world appears less as a domain made up of autonomous units and more as an interconnected system.

5. The continuing emergence of a global telecommunications network with the Internet at its core. The consequences of the evolving global network can be felt across the worlds, economies, societies, and cultures. I wish to draw attention to just one consequence—that is the declining importance of geography in determining the potential of any region to participate in the world's economic and social discourses.

And, that brings me to the role of the university in this emerging global environment.

## The Heritage and Promise of the Latin University

Latin universities are the oldest in the western hemisphere.

Universidad de Santo Tomas de Aquino (Universidad Autonoma de Santo Domingo) 1538.

Universidad Nacional Autonoma de Mexico, 1551.

Universidad Nacional de San Marcos, Lima, 1551.

They are heirs to a rich heritage that, I believe, will expand their positions of leadership in the 21st century. If we look carefully, we may observe 5 tendencies that offer areas of opportunity.

## 1. Universities have become powerful centers of innovation, and this cuts two ways.

Formidable research centers in leading industrial countries out compete universities in the rest of the world by virtue of the scale of resources that they attract.

On the other hand, universities in parts of the world once seen as peripheral can lead in specific areas because geography no longer impedes the flow of information.

The goal is to find niches from which to influence academic and policy discourses.

## 2. The University as window out to the world, and window in from the world.

Universities can easily draw on a vast body of world wide knowledge to address problems specific to their region. Regional issues, such as agriculture, aquaculture, energy, tourism, and telecommunications can be addressed locally by bringing to bear knowledge from around the world.

At the same time, the university serves as a central node connecting the local network to the global network.

The challenge is to leverage the advantage of interconnectivity, in order to maximize the innovative potential of university faculty and researchers.

### 3. The university as an incubator of innovations.

Forty years ago, when I was a young graduate student, and the Internet was still known as Arpanet, we pooled our extra journals and books to send to our colleagues in Latin American universities to stock their libraries. They eagerly read the journals we sent, and often commented on the frustration of being on the periphery of their fields of interest. Then came Bitnet, and then came the Internet.

Today, our colleagues draw on ideas from around the world in order to formulate their own unique contributions. As primary nodes on a global network, Latin American universities have broken the constraint of the old one-way the flow of information, thereby reinventing the whole territoriality of research and development.

4. The university as incubator of talent. Any university's greatest asset lies in its faculty and students. By exploiting its interconnectedness, a university can offer a world-class education to those of its students willing to work for it.

For example, in my own university, the physics department and the astronomy department list numerous faculty who gained all or part of their education in Latin American universities.

My point is that the best science graduates at Latin American universities are on a par with the best of the best. Thus, to nourish human resources of such high quality represents a tremendous gift for any country, but to firm the foundation upon which to build a leading reputation.

5. The university as a crucible for creativity in art, culture, and the preservation of indigenous culture. Latin American universities have long excelled in humanistic studies. After all, they are the direct descendents of Greek and Roman classical education. They excel in the teaching of the seven liberal arts—the trivium (grammar, rhetoric, logic), and the quadrivium (arithmetic, geometry, astronomy, music).

And, it is from these that new content will emerge to be distributed on the global network.

I emphasize content because we, in telecommunications, usually ignore content. Yet, content is the soul of the information age.

My lists might leave you with the impression that we faculty of the world's universities have entered a new era of opportunity—and we have—but, it is also a new era of challenges.

As universities become primary nodes in a global information society, they must also confront the challenges inherent in that achievement.

## 1. Communication.

The limits of privacy;  
the right of free expression, and  
the right of intellectual freedom

will be severely tested because the consequences of each pose obvious challenges to various corporate and governmental elites.

## 2. The Tragedy vs. the Comedy of the Commons.

The tension between control of intellectual property and open access to information will push and pull as universities struggle with a resource that was once ignored, but is now seen as a rich asset.

In a sense, this is a struggle between a theory of scarcity vs. a theory of abundance. Which will accrue the greatest good to the university (and society)--university products distributed through the forces of market induced scarcity, or abundance of access in a university that is also an information commons?

### 3. Global Responsibility or Local Responsibility?

For universities, the opportunities of the global arena will pull against the needs of the local arena as each university redefines its sphere of social responsibility.

Every university struggles to find this balance, and for each university it must be a unique solution.

#### 4. Whom do we serve?

As they have for centuries, universities will find themselves tested as to their commitment to social justice for the poor and the marginalized.

Whether the goal is fulfillment of the Land Grant Obligation, the realization of national development, or a commitment to the moral principles of the Judeo-Christian tradition, every university must confront its potential to improve the quality of life for the residents of the planet.

Ultimately, the university in the information society becomes the world's public sphere, the universal plaza where all classes, peoples, and institutions meet to exchange views, ideas, and possibilities.

Not surprisingly, Plato raised the question of this presentation in a dialogue with Socrates, nearly 2,500 years ago.

Plato, "What can education contribute to a just society?"

Socrates, "Music for the soul."

--Plato, in *The Republic*, bk. 2, sct. 376.

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