

THE ECONOMICS OF OPENNESS IN HIGHER EDUCATION

BY

DAVID JOHNSON ONDERCIN

DISSERTATION

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Doctoral Committee:

Associate Professor Pradeep Dhillon, Chair
Professor Emeritus Michael A. Peters, Director of Research
Professor Marilyn Johnston-Parsons
Research Professor Tina Besley

Abstract

The debate about economic globalization, open education, and public spending has been growing. There has been a transformation in the relationship of the universities to government and in their internal dealings for planning, management and resource allocation. Today, universities the world over face the difficult challenges of meeting the need for productive employment, including the adoption of information and communication technologies for offering their present face-to-face programs, while at the same time operating flexible and lifelong learning programs, which encourages global competitiveness, networking, and partnership. In order to meet this challenge, it has become necessary for universities to restructure, reengineer, and reform their practices. Information systems educators and others in similarly professional disciplines will benefit from an alternative infrastructure for learning. By creating, the “open classroom” model in higher education, which integrates “open” technologies to create “knowledge products” which completely engages the students and provide value to the institutions and nations. It is because of this essential need for globalization and open education that I explore these essential ideas. The problem is that open source/access models are struggling against the neoliberal concept of privatization and monopolization. I argue that there can be a practical solution for having open source/access models and the need for privatization of knowledge. I argue that the knowledge economy in the global economy will be the driving change in utilizing open systems, open learning systems have a great impact on higher education, and that the economics of education needs to address knowledge production and ownership. The research conducted is a case study involving an assessment of three institutions (MIT, Harvard, & Princeton) open access policies and their approaches to Intellectual Property in higher

education. The implication for this research is for a better understanding of open access policies in higher education and learning way of developing and implementing Intellectual property policies for students, faculty, and institutions.

Dedications

I want to dedicate this dissertation to my parents, Dr. David G. Ondercin & Joan M. Ondercin, for instilling in me the desire to for the love of learning and the continued encouragement and support.

I would also like to dedicate this dissertation to my wife, Dr. Gina K. Ondercin, for the providing the encouragement, guidance, love, and support.

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Chapter 1

Introduction

Background of the Problem

The relationship between globalization, open education, and public spending has been growing in recent years. The discussion is often couched in terms of the efficiency and compensation. There are many studies on the impact of international economic integration on domestic policies and public finances. Countries will be and are being driven to adopt OLS because it permits nations to continue the social contract of providing education to their populous, and provides opportunities for developing nations to offer education for the first time to their citizens.

There has been a transformation in the relationship of universities to government and their deals for planning, management and allocating resources. Universities face the difficult challenges of meeting the need for productive employment, which includes using Information and Communication Technologies (ICT). These resources provide face-to-face programs, while providing flexible and lifelong learning programs encourage global competitiveness, networking, and partnership.

Educational leaders, faculty, and policy makers have to respond to the provision of individualized mass education with a greater sense of quality assurance and at a lower financial cost. Education has come in many forms and is always seeking the next magic bullet to solve the problems of the masses in hopes of establishing credibility among the other disciplines. It is not the ultimate resolution to solve the world's educational problem. A new paradigm exists in which education can be constructed and has the opportunity to better educate those in the creative economies. The establishment of the Open Learning Systems

(OLS) provides student, learners, educators, and administrators with the capability to take a step back from the (educational structures) forest that it has become and view the educational tree (OLS) through the lens of the creative economy. There is an ever-growing momentum shift to becoming global and the absolute necessity for educational institutions and nations to begin to change their approaches to education, otherwise there will be a lagging capacity for nations' to adapt to the more progressive forms of education (OLS). "Globalization has been in the forefront of public debates in recent decades. It was brought anew in the debates surrounding the current global financial crisis that have forced many to reconsider the idea of globalization and raise a number of new questions" (Popkewitz & Rizvi, 2009, p. 7).

In the past and current economic crisis, nations are scrambling to determine the allocation of their resources to solidify their economic policies. In a report by The World Bank, a critical examination of the past few years was comprised. Net global capital flows to developing countries fell 20 percent in 2009 to \$598 billion (3.7 percent of gross national income [GNI]), from \$744 billion in 2008 (4.5 percent of GNI) and were a little over half the 2007 peak of \$1.11 trillion. Global private flows (debt and equity) declined by 27 percent in 2009 despite a rebound in bond issuance, portfolio equity flows, and (mostly trade-related) short-term debt flows. Foreign direct investment (FDI) inflows across the globe fell 40 percent, to \$354 billion - their sharpest drop in 20 years. All the largest recipients of FDI saw net inflow declines in 2009. Net debt flows from private creditors dropped by 70 percent from \$182 billion in 2008 to \$59 billion the following year, driven by the collapse in medium-term commercial bank lending to public and private borrowers. Reflecting increased support to developing countries during the crisis, net capital inflows (loans and grants) from official creditors increased by 50 percent to \$171 billion in 2009. This was driven by a sharp

rise in gross disbursements on new loans extended by the international financial institutions. These rose to \$98 billion (from \$61 billion in 2008) in calendar year 2009, of which \$31 billion came from IBRD and IDA, the highest in the history of these institutions (The World Bank, 2010).

In comparison to other regions, Europe and Central Asia has been most severely affected by the global economic crisis. Combined debt and equity flows plummeted in 2009 from \$411 billion in 2007 (15.8 percent of GNI) to \$90 billion (3.6 percent of GNI). The East Asia and Pacific region recorded a moderate 4 percent rise in net capital flows from 2008 to \$191 billion in 2009, although they remained constant in terms of share of GNI (3.1 percent). The Latin America and the Caribbean region saw net capital flows continue their downward trajectory in 2009. They fell by 6 percent in 2009 to \$167 billion, but remained at the same level as 2008 in relation to GNI, 4.3 percent. The Middle East and North Africa region recorded the sharpest rise among all regions for net capital inflows in 2009. Capital inflows rose 33 percent to \$28 billion, driven by new official and private borrowing. South Asia also saw net capital increase sharply in 2009. Capital flows were up from the previous year by 26 percent to \$78 billion, primarily because of a remarkable \$37 billion turnaround in portfolio equity flows. The Sub-Saharan Africa region received the highest net capital inflows of any region in 2009 in relation to GNI, 5.2 percent. Net capital flows rose 16 percent to \$45 billion, driven by a resurgence of portfolio equity inflows and a doubling of net debt inflows from official creditors (The World Bank, 2010).

The financial crisis interferes with policies and programs, which leads to subsequent reactions to cut developmental policies and weaken long-term objectives. Of course, the crisis responses can introduce fiscal stimulus which is more likely to result in more capital

public expenditures. For developing and transitional nations, external and internal requirements have decreased government spending and restructuring of budgets. In doing so, it provides an opportunity for nations to return to financial solvency and growth. When nations contract their spending and are incorporating measures of austerity there is a risk for public programs to be cut. When budgets contract the issue is whether in doing so that it simply reduces programs or severely compromises the programs. The social programs represent a large segment of government spending and it is often ending in cutbacks and downsizing. The past and current crisis is sadly, no exception. Nations have become more sophisticated at crisis management and they implement financial measures, financial safety nets, and implement the protection of social-sector borrowing. Countries have reallocated budgets for social spending and some nations are using the crisis to make drastic reforms. Countries are relying on data and policy research in making fiscal distributions in dealing with austerity measures (Lewis & Verhoeven, 2010).

An issue that remains between globalization and open education is how to negotiate the struggle between companies profiting from the use of the open networks and others who believe the open network content should be free for everyone. Globalization, improvements in Information Technology (IT) and the dramatically increasing internet usage by everyone is creating problems in property rights issues, which needs to be addressed by everyone. Many knowledge-based resources (software) are globally accessible and the issue of property rights and knowledge based resources ranges from specific technical, functional, and creative skills (Costello & Costello, 2005).

It is difficult to keep non-owners of the IP from obtaining access. Changes in information technology and increasing internet usage make access to knowledge-based

resources easier and once access is obtained, the resources can be shared with a countless number of individuals. All of this is of course, without the consent of the resources' original owners. New technologies are always being developed and some that negate the existing enforcement technologies and increase enforcement costs are constantly being developed. These created technologies take from the rightful owners in order to exclude the non-payers (Costello & Costello, 2005).

The call to improve internet governance was heard often at the United Nations (UN). The UN organized a World Summit in November 2005 on the Information Society (WSIS) in Tunis, which was a follow-up to the December 2003 summit in Geneva. The participants had very different ideas about how the internet should be managed and who should influence its development. Many governments did not approve of the current situation in which private companies build and run the internet. An issue that was of concern was the management of domain names, which today is overseen by the International Corporation for Assigned Names and Numbers (ICANN), an internationally organized nonprofit corporation (Nelson, 2005).

The brilliance about the creation of the internet is the open standards and open processes allow for anyone to develop, propose, and promote new standards and applications. There are many users who compete with one another. Internet users and not governments/companies have the most influence. Internet users demand for constant innovation and competition. Nations already have power and influence on the free market because they are large, important customers, and because they create the regulatory environment in which companies operate. Because the internet is truly global, there is a necessity for coordination on standards, domain names, and most importantly, cybercrime.

There are many different players involved and it will require several organizations to handle and create solutions for all the problems (Nelson, 2005).

There is the potential by everyone to make the next century an opportunity for greater individual autonomy and the opportunity to change the way the creation and exchange of information, knowledge, and culture. These changes will be the foundation to a more liberal and free society. Anyone who values human welfare, development, and freedom needs to embrace the concept of the networked information economy (Benkler, 2006).

For faster growth of a countries economy, human capital should be available along with needed physical infrastructure. That is why, improving and expanding education are essential ingredients of any national development policy. However, developing countries fail to offer education to all sectors of their people through conventional on-campus system of education due to lack of infrastructural facilities and some constraints embodied in it. Distance and open learning systems can play an important role to close this gap. In addition to admitting more students from different background, environments and geographical backgrounds, open learning environments do not require the uses of scarce on-site space. Distance and open learning system offer educational institutions more revenue. That means open learning systems are a cost-effective way of financing mass education.

A nation's financial policy decisions are cultivated by the assessment of current economic conditions based on incomplete economic data and by the anticipations of future economic fluctuations. An important task for central banks use data which is slowly released and are subsequently revised. Another factor in the determination of nations' policies is the estimation of current and next quarters for GDP growth. Central banks conduct short-term economic analysis by using monthly indicators which are routinely used to assess the current

economic conditions before gross domestic product (GDP) figures are made available (Ferrara, Guegan, & Rakotomarolahy, 2010).

Some key examples of nations and their spending of their higher education and GDP growth will follow. The Tertiary Expenditures of the nation of Australia had its lowest expenditure in 2007 having twenty and a half percent (20.21%) and having a high of expenditures in 1998. The nation dropped its spending over a 9 year period by 7 percent with having an average expenditure of twenty-three percent (23.63%). Australia's neighboring country of New Zealand, there was missing data in the years of 1998 and 2000, but it did have a high expenditure in 1999 with forty percent (40.08%) and low of twenty-five and half percent (25.51%) in 2005 (The World Bank, 2010).

The United Kingdom had its highest tertiary expenditure percentage in 1998 with thirty-two percent (32.45%) and a low of twenty-two percent (22.95%) in 2000, providing for an average percentage of twenty-seven percent (27.06%). France had missing data in 1998, and had its lowest percentage expenditure being in 2003 with thirty-three percent (33.95%) and a low of twenty-eight percent (28.64%) in 2001. During this nine year period of data, it averaged thirty-one percent (31.71%). The last nation of data is of the Russian Federation with having missing data in 1998, 1999, & 2007. The data that was provided demonstrated that in the year 2004 its expenditure was ten percent (10.84%) and a high of twelve percent (12.09%) 2003 and having an average percent expenditure being eleven percent (11.78%) (The World Bank, 2010).

In developing countries, students who cannot go to school due to a personal financial problem of their parents can have the ability to earn an education. Consequently, Open Distance Learning (ODL) systems have proven a way for people to earn an education, which

would otherwise, not possible (Dekkers, 2000). When compared with traditional forms of education, distance education requires great planning, larger upfront infrastructure costs, and more complex student and administrative support systems (Lockwood, 1995; Rumble, 1986). Well-designed support systems enable the delivery of distance education courses of comparable quality which results in attrition rates to those for on-campus courses (NEA, 1999).

Although an OLS is the most efficient and appropriate way to offer education in the developing countries, the great concern that attracts the attention of the distance educators is the quality of OLS programs. Still, institutions are struggling with quality issues of their programs. Sometimes, OLS institutions are low-grade graduate-producing factories. The main criticism may stem from the implementation of the OLS. In reality, a number of factors are involved with the improper implementation of distance education system in the developing countries.

Another important aspect of open education is the need for open economic policy. As part of an open education initiative, communication technologies used to market educational products, support communication and other forms of structured activity, courses are delivered completely online. Traditional higher education institutions are facing strong competition from the new virtual and corporate universities. The online university copies the traditional university and provides instant educational opportunities (Heydenrych, 2000). Traditional higher educational institutions have to position themselves to accommodate the information technology revolution as a positive factor in learning. If traditional institutions continue to resist these structural and paradigm changes they will not be able to realize the significant benefits from the new technologies.

In the Open Learning System, the design structure serves as a filter for knowledge and information. It has the ability to take all forms of information and provide a structure to filter information. The increased interest in knowledge discovery, knowledge management, and knowledge transfer is attributed to many factors including the advances in information and communication technologies; data explosion and information overload, and the need for organizations to better utilize their intellectual capital. This swift pace of growth in digitized information makes it imperative for OLS to seek alternative methods to utilize these invaluable assets. In order to assist the learner/user with the problem of information overload and not exacerbate it, these new methods should go beyond what is already available to the knowledge worker today. “Over the last twenty years, the Internet has transformed the way in which information is created, stored, and accessed. We are now all experiencing a “data deluge” on a global scale. The “needles” of information that we require may be the same size as before; but the “haystack” in which they are contained has grown infinitely larger and will continue to grow” (Baker, 2008, p.1).

The OLS structure serves as a warehouse of information with the preconception that the information provided and used in OLS is a peer-to-peer evaluation system. As a collective, OLS serves to determine which information is more valid and reliable. In this capacity, users will have access to whatever necessary information, but there may be some limitations and critical evaluations of the information to ensure the quality and academic integrity of the information used.

The mainstream body of academic literature agrees that a certain level of commercialization is necessary to ensure adequate responses to decreased public funding and new demands. There are many different kinds of entrepreneurial activities which have

emerged, ranging from government-led systems to incentive-based and hybrid ones as in the nation of Australia (Harman & Harman, 2004). The future higher education research needs to contribute to this major issue for the development of industrializing nations (Schiller & Liefner, 2006).

This changing form of higher education means increased flexibility through access from any workstation, lower costs, increased security, and responsive Institutional Technology (IT) infrastructure for faculty and administrators. Open education is critical to the future economic sustainability for nations. Open education is not just about technology; it is about new ways of communicating, collaborating, and exchanging information. In this operating system, it provides every student is able to achieve his or her full potential. The important shift indicates a need for education to become unified. In doing so, it makes education more students and outcome centered and less centered on individual institutions. Open education enables seamless delivery at a reduced cost. The question is not if open education should become a global reality, it is when and how it can take form and begin to impact students. Learning and education should never be proprietary in nature. Global educational systems should have access to the best content and resources possible (King, 2009).

The importance of Open Content and Open Source Software tools that enhance learning processes has been acknowledged by international initiatives and organizations. Open Educational Resources (OER) are important elements of policies that want to leverage education and lifelong learning for the knowledge the society and economy. The use of (OER) promotes student centered and collaborative educational approaches have not been fulfilled. Rather, there is a considerable discrepancy between teaching and learning by

traditional educational institutions and the knowledge based economy. There is a gap between current educational practices and communities outside the classroom (Schaffert & Geser, 2008).

Open universities represent the most significant forms of educational organization intended to achieve social change, which is needed by governments of all political persuasions (Tait, 2008). Some roles open education should be is to help national and economic development, respond to public demands, expand access to students, and change the quality and innovation of their respective higher education system. With these roles in mind, open higher education systems will not provide social justice because higher education systems will not satisfy because of its own interests. Open universities are highly political institutions because of the inadequacy of the traditional higher education system. It also fails to meet the challenge of modernity. Open universities are therefore often national or state led constructions that need to balance all political aspects of higher education. As open university begin to see returns to more direct interventions by nations and states it will begin to act on the behalf of students, faculty, and administrators (Tait, 2008).

While all traditional universities are embedded in their communities and societies, open universities are even more sharply profiled in the higher education environment. Open universities have to walk the fine line between being a university, as a necessary condition of their existence for students and staff in terms of recognition and reward. Open institutions are challenged by those whose concept of the “university” does not fulfill a range of perspectives and challenging. It challenges the traditional definition of a university. The more open universities seek to be like traditional universities, the more they will lose these critical distinctions and uniqueness. There continues to need to be an uncomfortable difference

between traditional open universities. This difference in being unique is essential for open universities in order to provide legitimacy for students, faculty, and administrators (Tait, 2008).

The purpose of an open university previously defined in this way, is much more complex than for most traditional institutions. In the creation of open universities it requires students, faculty, administrators, and policy makers need to continue to discuss what it means to be and constitutes a “university.” It means that institutions need to share enough of the traditional characteristics to offer recognized academic awards and to attract and retain students and staff. The difference between traditional and open institutions is that open universities have the ability to continually change, challenge, and innovate. An important characteristic of an open university is the continued existence which is engaged in risk, driven by values and missions to create a better form of higher education (Tait, 2008).

Statement of the Problem

The problem is that open source/access models are struggling against the neoliberal concept of privatization and monopolization. I argue that there can be a practical solution for having open source/access models and the need for privatization of knowledge. I argue that the knowledge economy in the global economy will be the driving change in utilizing open systems, open learning systems have a great impact on higher education, and that the economics of education needs to address knowledge production and ownership.

Openness can be a practical solution to the economic and financial problems nations’ are having in affording higher education. There has been a resurgence of interest in extending this line of investigation to include financial globalization. Since the 1990s, there have been several financial crises that highlighted the pitfalls of financial volatility and their contagious

character around the globe. There is now widespread agreement among economists, sociologists, and policy analysts that creativity, design, and innovation are at the center the global knowledge economy. The skill to reinvent itself by using creativity, design, and innovation help to define knowledge capitalism. In combination with new and existing communications, technologies, which provide the opportunity for digital capitalism, “economy of ideas,” and have the capacity for new creations of mass collaboration, can distinguish itself from traditional industrial capitalism.

Open Learning Systems is an operational component of Open Learning and Open Education based on new social media and social technologies that promote the ethic of collaboration and sharing often based on P-T-P infrastructures. It is apparent from the ideas presented, that OLS is a new way of viewing curriculum and education systems. OLS has the facility to be adopted by the multiversity that currently envelopes our current university systems and demonstrates the appeal to a mass audience of learners, not just those housed at universities and colleges.

The creation of the Open Learning System provides educators and administrators with the opportunity to take a step back and view the educational process through the lens of the creative economy. There is an ever-growing momentum shift by institutions of higher education, nations, and world economies to begin to accept open education, otherwise there will be a lag to adapt to the more progressive forms of educational Open Learning Systems.

Purpose of the Study

The purpose of the study is to examine the struggle between the concepts of openness in higher education and the privatizing of knowledge/information. The quick globalization of the world’s economies in recent years is largely based on the rapid development of science

and technologies. The transition from centralized planned economies to market economies has made it possible for the world's economies to integrate into a whole. The transformation of nations into knowledge societies will depend, largely, on their capacity to provide and sustain knowledge citizens and knowledge workers.

Information systems educators and others in similarly professional disciplines will benefit from an alternative infrastructure for learning. The open classroom model of education integrates “open” technologies, such as Wiki and Open Source Software to create enduring “knowledge products” that more completely engage students and provide value to society. It is because of this essential need for economic globalization and open education that I am exploring these essential ideas with my key research questions: 1) What is the role Globalization plays in the Knowledge Economy? 2) How does Openness and Open Education impact Higher Education? 3) How does Intellectual Property play a role in higher education?

Significance of the Study

This study is significant because open systems theory has profoundly altered how we understand higher education institutions as organizations and the demands placed upon educational leaders. In doing so, it has created a problem of Intellectual Property ownership between faculty, institutions, and publishing companies. Treating schools as if they are independent of their environment would lead to wide misperceptions of the driving factors behind organizational change. Contemporary studies of accountability movements, teacher professionalization, and instructional leadership all benefit from a strong open systems approach to understanding environmental demands and the resulting adaptation of school policy and its implementation, or lack thereof.

The establishment of the Open Learning System provides educators and administrators with the ability to take a step back and view the educational process through the lens of the creative economy. There is an ever-growing momentum shift by institutions of higher education, nations, and the world to begin to change their views on education, otherwise there will be problems in being able to adapt to a more progressive forms of education.

Definition of Terms

Economic Globalization: “Economic globalization “pertains to deeper integration and more rapid interaction of economies through production, trade, and (unregulated) financial transactions by banks and multinational corporations, with an increased role for the World Bank and the International Monetary Fund, as well as the more recent World Trade Organization” (Moghadam, 2005, p. 35).

Open Education: Open Educational Resources (OER) are teaching and learning materials that are freely available online for everyone to use, whether you are an instructor, student or self-learner. Examples of OER include: full courses, course modules, syllabi, lectures, homework assignments, quizzes, lab and classroom activities, pedagogical materials, games, simulations, and many more resources contained in digital media collections from around the world (Higher Education Academy, 2010).

Intellectual Property: Intangible rights protecting the products of human intelligence and creation, such as copyrightable works, patented inventions, Trademarks, and trade secrets. Although largely governed by federal law, state law also governs some aspects of intellectual property. Intellectual property describes a wide variety of property created by musicians, authors, artists, and inventors. The law of intellectual property typically encompasses the areas of Copyright, Patents, and trademark law. It is intended largely to encourage the development of art, science, and information by granting certain property rights to all artists, which include inventors in the arts and the sciences. These rights allow artists to protect themselves from infringement, or the unauthorized use and misuse of their creations. Trademarks and service marks protect distinguishing features (such as names or package designs) that are associated with particular products or services and that indicate commercial source (West, 2008).

Limitations

A limitation of the study is only conducting three case studies instead of using more to have a larger sample size. Another limitation is the not having interview data as part of the

case study. A final limitation is not evaluating the individual websites themselves and collecting data from the respective websites to gather new data to be analyzed.

Chapter 2

Review of Related Literature

Introduction

Institutions of higher education are facing problems in meeting employment, utilizing new technology while staying globally competitive for faculty and research. I believe that educational leaders, teachers, and policy makers have to respond to the provision of individualized mass education with a greater sense of quality assurance and at a lower financial cost. The university's role in the nation's economy is to increase its ability to transfer research to industry, generate new inventions and patents, and spin-off its technology in the form of startup companies.

There has been a movement in the U.S. and around the world to make universities “engines of innovation,” and to enhance their ability to commercialize their research. The idea of open learning innovation in the peer-to-peer systems of higher education has been put into the forefront of economic, social, and cultural creative concepts. Open learning and open innovation provide educators and administrators in the peer-to-peer networks the ability for them to take a step back and view the educational process through the lens of the creative economy. There is an increasing energy to embrace open innovation and the necessity to use peer-to-peer networks for educational institutions.

The world and commerce are becoming more dependent on science and entertainment when it comes to innovation. Shared knowledge is changing since there is the continual questioning by the participants, which is enhanced through the combining the efforts (Nelson, Christopher, & Mims, 2009). One of the roles institutions must do is to increase the ability of transferring research to industry and generate new inventions from its technology.

There has been a movement in the U.S. and around the world to make universities centers of innovation, and to enhance their ability to commercialize their research. The idea of open learning innovation within the peer-to-peer system of higher education has been put it into the forefront of economic, social, and culturally creative ideas.

Openness and peer-to-peer (P2P) networks are major driving forces to knowledge creation, social, and economic advancement through the development and implementation into a knowledge society. Technology regularly involves changes in a culture's norms and also requires for societies to stay current in an evolving culture. Openness and P2P are receiving high levels of attention from scholars, professionals, and policy makers. Also, a growing number of publications and conferences are exploring the issues. Openness and P2P are important ideas in the area of policy development in higher education. Various faculty and administrators believe that by providing advanced technological structures is required to develop and maintain a technological instruction. It is crucial for educational systems to offer opportunities for students to develop skills (Langer & Knefelkamp, 2008).

Since open education is a new paradigm, many faculty members are unprepared for the fundamental differences in the roles required for teaching online. A higher level of involvement by administrators in faculty support is needed to ensure success. Open learning and open innovation provide educators and administrators in the peer-to-peer networks, which provides the ability for them to take a step back and view the educational process through the lens of the creative economy. As higher education faces competition for nontraditional students, it is important for faculty and administrators to identify the needs of their adult students. Institutions must understand student's preferences in using online learning and ensure they take those preferences seriously when planning their e-learning

courses and degree programs. Adult students have different learning needs and expectations. The body of literature has established an emphasis on adult education and in doing so, adult education has become an important factor in U.S. education (Ausburn, 2004).

The increased rates in the knowledge and skills have forced individuals to move to lifelong learning considering the economic changes in technology. A lifelong learning culture necessitates that the learner be at the center and needs to supply learners' needs with the motivation to learn while having a self-paced and self-directed learning environment. Open learning programs are becoming an essential model of learning for lifelong learners and there has been growth in the number of open learning programs. It is essential to understand the processes of what constitutes open education and for educators and administrators to provide effective online guidance services as a part of their educational programs with the increasing number of open learning programs continue to grow (Zhang & Ng, 2006).

Higher education has become the new leader in the policy development for governments. The public policy focus on higher education reflects a growing consensus in macroeconomics of new growth or endogenous growth theory. Universities play a key role in the knowledge economy. Knowledge about technology and information are considered critical for economic development. Higher education institutions have developed associations with industry and businesses. This form of higher education policy promotes entrepreneurial skills and national systems of innovation (Peters, 2003). It is through many aspects of open education that it will create new opportunities for students, educators, and administrators.

The global economy is rapidly changing how individuals, businesses, and governments interact. The world's stability of economic power has shifted since the start of the 21st Century. Globalization increases the speed at which goods and services move across

international borders, and poses challenges, as well as opportunities, for many aspects of the global economy. As corporations become more global, they impact their regional cultures and also create problems in both developed and less developed nations. Some citizens have adopted anti-globalized and anti-democratic viewpoints in order to preserve their traditional cultures and values.

The changes brought by corporate globalization are viewed by others as a vehicle for the advancement of banking reforms, capitalism, democracy, economic development, property rights, and personal freedoms around the world. Some workers are dissatisfied by globalization, governments, and public administrations when they assume greater responsibilities for guaranteeing education improvements and economic security.

Globalization is having a significant impact on the roles and responsibilities of business, government, and society (Milakovich, 2006). The world economy requires strong demands for rules of international commerce. The international business requires governments to enforce trade agreements that promote order and openness. A large number of these agreements are global because the support of both developed and developing nations are needed for their effectiveness. The United Nations serve the economic interests of developing nations by facilitating the ability to influence international economic governments and their integration into the global economy. This process is important for order and global welfare. The economic legal frameworks of international relationships are created to provide a proper organization and conduct cooperative agreements. Because of its regulatory features, the economic and legal frameworks of the international relationships play an important role which guarantees a successful organization and collaboration between nations. An economic and legal framework of the international associations is considered a

concrete and immediate course that allows nations to create a situation that is more favorable. In doing so, it is with the desire to obtain the benefits and short term gains (Zamfir, 2009).

An essential element in globalization is developing international economic exchanges. The economic system requires nation states, as trading partners, with a desired goal to achieve trading of raw materials, economic cooperation, and participation at international division of labor. These agreements have played a key role in promoting free trade in a globalizing world. These trade agreements are also a tool for promoting fair competition and encouraging foreign governments with hopes of adopting open and transparent rulemaking procedures and non-discriminatory laws and regulations. Trade agreements have the capability to strengthen nations' business climate by agreeing to the commitments on the issue the reduction and elimination of tariffs (Zamfir, 2009).

Societies and industries are increasingly becoming more dependent on innovation in areas ranging from science to entertainment. Shared knowledge evolves and is always changing because of the incessant questioning by the participants and is improved through the combined efforts of its contributors. Complex thinking can be the result of collective shared knowledge with the outcomes for individuals being able to share ideas and knowledge freely having the ability to achieve the best possible results (Nelson, Christopher, & Mims, 2009). "Openness has become a leading source of innovation in the world global digital economy, increasingly adopted by world governments, international agencies, and multinationals, as well as by leading educational institutions as a means of promoting scientific inquiry and international collaboration" (Peters, 2009, p. 203).

Globalization in the Knowledge Economy

Knowledge Economy

I argue that the knowledge economy will continue to be advanced by globalization of information, education, and technology. Higher education is being driven by the application of technology, especially online technology. The economics of openness is being driven by the need to get educational costs under control, while at the same time expand the opportunities to potential students who find it attainable through OLS because traditional education is not necessarily a successful option.

Society and industry are becoming more reliant on the creative innovation and to make improvements in everything from medicine to entertainment. Advanced creative thinking is often the product of collective knowledge. This is the result of individuals sharing ideas and knowledge freely in order to achieve the best possible results. Knowledge that is shared continues to grow and change because of continuous questioning and improvement through the combined efforts of its contributors (Nelson, Christopher, & Mims, 2009).

The development of the knowledge and learning economies emphasize the changing significance of intellectual capital and tacit knowledge in the forms of human, social, and intellectual capital for economic growth and development. The knowledge economy is not an ideological policy construction. Rather, it directs the ideas that have to be described, analyzed, and explained. The creative economy is a term based on many of the same economic arguments with the theoretical knowledge and the significance of innovation. Digital information goods undercut the traditional economic assumptions of rivalry, excludability, and transparency. The knowledge economy is about creating intellectual capital rather than accumulating physical capital (Peters, Marginson, & Murphy, 2009).

In *The Economics of Knowledge* (2004) Dominique Foray argues:

Some, who had thought that the concepts of a new economy and a knowledge-based economy related to more or less the same phenomenon, logically concluded that the bursting of the speculative high-tech bubble sealed the fate of a short-lived knowledge based economy. My conception is different. I think that the term ‘knowledge-based economy is still valid insofar as it characterizes a possible scenario of structural transformations of our economies. This is, moreover, the conception of major international organizations such as the World Bank and the Organization for Economic Cooperation and Development (OECD, ix).

According to Michael Peters (2010), Foray ideas represent “the rapid creation of new knowledge and the improvement of access to the knowledge bases thus constituted, in every possible way (education, training, transfer of technological knowledge, diffusion of innovation), are factors increasing economic efficiency, innovation, the quality of goods and services, and equity between individuals, social categories, and generations. He states that Foray argues that there is a collision between two phenomena – “a long-standing trend, reflected in the expansion of ‘knowledge-related’ investment” and “a unique technological revolution” (Peters, p. 206).

To operate in a creative economy individuals have to put aside the usual ways of thinking. When we put aside this way of thinking, we will see that things do not change it is the individual creative thinkers are the change. When people think of creativity they often think of Microsoft, Apple, Google, and many other technological innovators. It is because of this view, that the idea of creativity has been changed with the help of Richard Florida, Charles Landry, Michel Bauwens, and many others. The idea of creativity has been put into

the forefront of economic, social, and cultural creative concepts. Creativity has been identified as a key factor for addressing the challenges caused by these changes as well as a major driving force to knowledge creation and social and economic advancement through the development of a knowledge society. Creativity has received a high degree of attention from scholars, professionals and policy makers in recent years. A growing number of publications and conferences have explored the subject from various angles, and some governments have explicitly singled out this topic as a policy priority (EAU, 2007).

However great these creative concepts are in dealing with the knowledge and creative economies and in lieu of the current and potential tough economic times in the global economy, it raises the question of how can higher education be affordable in the creative economy and what will it look like in the developmental in its completion? Changes in economies at the local, national, and global levels are creating enormous new challenges for citizens and communities. The current crisis dramatically highlights and drastically alters the situation and predictions while showing the underlying structures (Borut, Germanese, and Barnes, 2009). With the creative economy becoming more influential and beginning to grow in academia, it is important to understand the foundational individuals and their theories of the creative economy.

In understanding the rise of the creative economy, there are many influential theories created by scholars and researchers, but for now, I argue that John Howkins, Richard Florida, Charles Landry, and Michel Bauwens are some of the imminent foundational theorists. They took it upon themselves to describe their view of the creative economy and show how the development of the creative economy will benefit society and world. In recent years, the field of regional economic analysis has focused on the social and cultural environment of a place

to explain variations in innovation activity, entrepreneurial dynamics, and economic growth and the emphasis on the notion of the creative economy became popular with Richard Florida's *The Rise of the Creative Class* (2002). Florida's ideas are derived from John Howkins's idea that human creativity is a key economic resource (Peters, 2009).

Florida focused his attention on cities. He also analyzed creativity as an economic force in history and the surfacing of the creative class. The new systems for technological creativity and entrepreneurship are the models for making things and an ecosystem within which creativity begins in the creative economy (Peters, 2009). The creative entrepreneur in the knowledge economy celebrates technological innovation. The modern day labor market rewards individuals who have completed an advanced education and training with a particular emphasis in science and technology fields. The creative class theories contrast with explanations that take into account the structural factors. For example, access to financial resources and markets as important markers of entrepreneurial success (Hackler & Mayer, 2008).

A second influential thinker regarding creative economy is John Howkins. He has spawned a lot of discussion regarding creativity, culture, heritage, knowledge, information, innovation according to John Howkins in his book *The Creative Economy* (2001). Howkins states that the creative economy utilizes a person's ideas, not land or capital, are the most important. According to Howkins, creativity is identified with the arts and culture: arts, architecture, craft, design, fashion, music, performing arts, publishing, etc. (Howkins, 2001). To recognize artists and performers as the only creative people in the world is not accurate. Howkins states that creativity is found not only in the arts, but everywhere in society. He continues that jobs and skills that involved science are just as creative as painting a picture.

These individuals in the arts and sciences use their creative imagination. Howkins states that this kind of creative thinking is now dominant and routine in many cities worldwide (Howkins, 2001).

Howkins says that the single most important factor in the creative economy is Intellectual Property (IP). He believes IP is the new currency of the creative economy. IP laws regulate the way we share ideas, how we earn rewards from our ideas, and how we have access to ideas. It is essentially a balance between protecting rights-holders interests and public interests. Howkins states that modern IP started to emerge in the 19th and 20th centuries (Howkins, 2001). A small group of people (professional artists and inventors) and a smaller number of distributors base the creative economy on the idea that creativity is the protected class (global entertainment and pharmaceutical companies) who invest in and distribute products. According to Howkins, worldview, IP law and licensing is a matter for experts. Howkins says, we need a new paradigm for IP based on the public's demand for knowledge. He states that as a society, we need to enlarge the public domain and increase access to books and their respective cultures, as well as, providing unprecedented access to research and development in public and private organizations/businesses. Howkins states that there needs to be a set of IP laws for each country (Howkins, 2001).

By the mid-1990s, two related concepts had begun to grow out of cultural policies, each of which was the subject of a great deal of policy interest: creative cities and creative clusters. Creativity can come from any source, including anyone who addresses issues in an inventive way be it a social worker, a businessperson, a scientist or public servant, but as of now, creativity is only legitimized in the arts. Creativity was presented as the key to urban renewal and the main reason industries of the twenty-first century would be dependent on the

generation of knowledge through creativity and innovation matched with rigorous systems of control (Hesmondhalgh, 2007, p. 557).

The third foundational thinker regarding the creative economy is Charles Landry. He states that the artistic creativity has qualities that work well with the creative economy. Landry's theory advocates the need for a culture of creativity to be a part of the urban stakeholders. He states that by encouraging creativity and legitimizing the use of imagination within the public, private and community, spheres the ideas bank of possibilities and potential solutions to any urban problem will be broadened (Landry, 2008). "The creative economy is an adjunct policy term based on many of the same economic arguments and especially the centrality of theoretical knowledge and the significance of innovation" (Peters, 2009, p. 4).

The final critical theorist regarding the creative economy is Michel Bauwens. He is the main proponent of the peer-to-peer mode of production is Michel Bauwens. Bauwens argues that this emerging "third mode of production" is aimed at producing use rather than exchange values. Peer-to-peer mode of production and the allocation of the necessary resources are not dependent on market pricing or on managerial control. Peer-to-peer mode of production is not motivated by a for-profit culture, but rather by "a for-benefit ethos and it enables production without manufacturer" (Bauwens, 2007). It is his belief that peer production may develop exponentially to become the predominant form of production, eventually replacing the capitalist system (Orsi, 2009).

Although peer-to-peer production is gaining momentum, in order for it to flourish and for Bauwens's expectations to become reality, a far more cohesive and fair social environment than the one that characterizes contemporary European societies will be

necessary. It seems unlikely that Bauwens's vision can be fulfilled given the time and resources required to ensure the success of common projects, and given the endemic lack of resources that compels most ordinary people to devote the majority of their time and efforts to market rather than non-market activities. As Cosma Orsi (2009) states that in the real world, most people are constrained by the necessity to create a livelihood with which to support themselves and their families, and it is only the wealthy that are unshackled from such financial constraints. If the latter can dedicate their time to profitable and or creative activities, the former must dedicate most of their time to productive work within the formal labor market. The Information-Technology Revolution (ITR) has expanded well beyond the high-tech sector and has shaken the very foundations of the previous industrial and occupational structures, redefining the rules of entrepreneurship and competition. Although knowledge and its dissemination has for centuries been the key driver of economic development, today knowledge-based organizations can gain competitive advantages through their ability to use, process, analyze, and share powerful information and communication technologies at an unprecedented scale and speed (Orsi, 2009).

Neoliberals have promoted a challenging process of the previously established production model. These changes have reduced both inventories and turnover times. The entire labor process becomes subject to increasing growth as well as to acceleration in the transformation of required skills (Orsi, 2009). The important point is that the knowledge and creative economies are not just created from ideology. This process demonstrates the need for scholars to describe, analyze, and explained the occurrences that are being constructed (Peters, 2009). It is because of this dramatic shift in forming creative economies that higher education is destined to change and become part of the central focus in the creative economy.

The concept of knowledge society is meant to create a new focus on the relationships between knowledge production and dissemination. The emerging concept of knowledge democracy furthermore assists individuals to realize that institutional structures of societies may appear to be deficient and the other developments demand change. Democracy is the most successful governing concept for societies during the two last centuries. Representation gradually became the predominant mechanism by which the population at large, through elections, provides societies with a general authorization to make decisions in all public domains. Representative parliamentary democracy is the image of advanced nation-states. The debate on the future of democracy in advanced national societies has not yet led to major innovations (Gerasymchuk & Sakalosh, 2007).

The internet provides for a better educated public which has wide access to information, and selects itself instead of by media filters. More importantly, individuals have become media. The crucial combination of a networked society and media/politics provides new problems. Advanced societies are characterized by an increasing intensity and speed of reflexive mechanisms and academic institutions are important for national and regional economies. Policy-makers increasingly look to academic institutions to function more fully as parts of knowledge-based economies. For academic institutions the recognition of such policy expectations is important because it is connected to the future funding and measures of institutional success. The recognition of academic institutions as generators of new knowledge through innovation proposes the need for a re-evaluation of how institutions can better fit their new respective role. A nation's potential is defined in a modern world not because of the present resources, but by quality of human capital, level of creation, and the

practical use of knowledge and innovative activity of economy (Gerasymchuk & Sakalosh, 2007).

The long-term economic growth depends on the support and expansion of global knowledge base in the developed countries which became possible in the knowledge based economy. The competitive model of highly developed countries is based on development of new technologies, the production of hi-tech products, and services. These nations rebuild their economy which are now based on knowledge and in doing so, creates millions of jobs connected with the use of the newest knowledge and technology (Gerasymchuk & Sakalosh, 2007).

The job for governments is the stimulation of the conditions that will help and develop this knowledge economy. There are many features of a knowledge economy and a useful list of components is offered by Coats (2004). The knowledge economy driven by ideas, creativity, and human capital becomes essential. Government intervention becomes an investment that enhances the quality of human capital (OECD 2001a). Many nations have adopted a supply-side labor market strategy an “active labor market policy” to expand higher education is the place that analytical or ‘thinking skills’ are created (Warhurst, 2008). According to Crouch (2004) there are three sources of skill investment: the individual, state (at local, national or regional level) and firms (either singly or in association). The particular configuration of these three mechanisms constitutes a skill formation system. With the knowledge economy, government (as the state) is assuming the key role. This approach is plausible given that there is a commonly held belief that it is hard practically, politically and financially for governments to shape labor demands. Governments intervene in the supply-

side of the labor market because it can and believes its impact is important and justified (Layard, 1997).

The knowledge economy requires complementary transformation in organizations' structures and practices. Reich (1993), for example, argues that the workplace is no longer a pyramid or bureaucracy, but a 'web of enterprise'. Such webs have an internal and external dimension. Use of advanced information technology allows the boundaries to become blurred, even to the point of the much-vaunted 'virtual organization'; while its functions are increasingly disaggregated into complex mixture of profit centers, franchises, small firms and sub-contractors.

In the creative economy, networks of suppliers, manufacturers and distributors, many of whom, previously competitors, are now collaborators. These corporations will need to focus on external rather than internal relationships, practices and structures as interdependence rather than autarchy becomes the organizing principle. Capability and self-sufficiency will be abandoned and instead corporations will outsource skills and competencies to others more efficient or more expert. Enabled by ICT, these relationships, practices and structures will be fluid so that the new corporations will be 'intentionally ephemeral' predicated on constant change, not stability, organized around networks, not rigid hierarchies, built on shifting partnerships and alliances' (Byrne, 2000, p. 46).

Globalization

Over the last two decades, since the resurgence of neo-liberal economic policy, modern globalization has become a central concern to academics, policy makers, and non-governmental organizations. A fundamental aspect of globalization is the creation of new institutions that have played a central role in shaping the rules of the economic game. To

understand globalization, it is important to include the International Monetary Fund (IMF), the World Bank and the World Trade Organization. Their purposes are to sustain and ensure global economic stability. The IMF in particular is empowered with preventing another world depression. Though born out of Keynesian ideas, these institutions have embraced what Joseph Stiglitz describes as “market fundamentalism”, following the political shift initiated in the US and the UK in the 1980s by Ronald Reagan and Margaret Thatcher (Gualerzi, 2005).

Globalization is not perfect and is not always the source of prosperity for everyone. Globalization itself is neither good nor bad, as Noble Laureate Joseph Stiglitz reminds us, but it benefited those countries that embraced it on their own terms. However, he argues that “globalization can be reshaped’ and if ‘properly, fairly run. . . there is a possibility that it will help create a new global economy in which growth is not only more sustainable and less volatile but the fruits of this growth are more equitably shared” (Stiglitz, 2002, p. 22). Liberalization means the elimination of the hindrances to the market, in particular, trade barriers and government interferences in financial and capital markets. The undoing of trade barriers is supported while there is the understanding of potentially disastrous consequences of excessive financial and capital markets liberalization are now recognized by policy makers (Stiglitz, 2002).

Joseph Stiglitz (2006) maintains that capital market liberalization has led to some of the most important macroeconomic shocks (Recent Financial Crisis) facing countries in the developing world. It is a source of instability” (p. 242). He argues “that government policy should work to reduce the real and financial volatility of the economy, and maintain the economy at as close to full employment as possible which reinforces the emphasis placed on

the importance of real stabilization and places the importance on developing policies that reduce the exposure of the economy to risk and increase its ability to respond, especially automatically, to the risks it faces” (Stiglitz et al., 2006, p. 245).

Free Trade had negative consequences when no steps were taken to counteract the impact on employment and wages. Trade liberalization is flawed by an unfair trade agenda, in which developing countries are told to open up their markets while they are cut off from access to richer nations markets. Latin American nations that have followed the IMF and The World Bank recommendations, particularly those concerning the liberalization of the trade in services have experienced the disastrous results of that free trade policy. Stiglitz observes that the theoretical foundation for liberalization is weaker when it comes to financial markets. In this case, liberalization implies the rejection of regulation in the domestic market and allowing infiltration by powerful foreign financial institutions which is argued as a requirement for attracting capital (Gualerzi, 2005).

Globalization measured as liberalization is measured by reductions in trade barriers or capital controls, whereas globalization as internationalism is measured by trade or capital volumes. Trade and capital capacities are good measures of internationalism because they assess the percentage of economy that is internationally orientated. They become weak measures of trade liberalization because they can increase under liberal and non-liberal policies. Trade barriers and capital controls are good measures of liberalization because they are based on quantifying changes in liberal policies. The ability to quantify the implementation of the trade policies is not clear. The most common measures are trade volumes (the share of trade in GDP) and average trade tariffs, and or non-tariff barriers. The former is a measure of internationalism, openness or a policy outcome and the second a

measure of liberalization, a policy input, opening or process. Trade volumes are more standard because the data is readily available for a longer time period and is less problematic to quantify than tariff and non-tariff processes. Other measures of the globalization of trade fall into the two camps: internationalism or 'openness' and liberalization or 'opening' measures (Sumner, 2004).

The argument in favor of a market-oriented society has a long and rich history. These policies have grown in many nations through the influence of academics and politicians. An essential aspect to this belief is the free exchange of goods, services, capital, and labor. This value is determined as a function of their supply and demand, which is the result in the most efficient allocation of resources in a society. Any governmental interference imposes costs on economic agents and results in an allocation of resources. Although the state plays a role in maintaining capitalism's competitive framework (enforcing contracts, reducing barriers to trade, upholding the rule of law), individuals acting according to their own abilities and initiative innovative and entrepreneurial opportunities in an effort to maximize their own well-being. In turn this creates a combined economic growth and raises the living standards of society (Mehrtens III, 2004).

Many developed and developing nations have liberalized their trading systems with the hopes of gaining from trade and that the liberalization will increase the growth of exports and imports and improve welfare. Trade barriers are still relatively high in many developing countries and this is because more liberal trade regimes may invite the possibility of a worsening trade balance. The impact of liberalization depends on the relative increase in the growth of imports and exports and as well as the prices of the product traded (Ghani, 2009).

As countries focus on their funding on their abundant resources, globalization also shifts the relation of primary to tertiary spending upward in developing nations and downward in developed states. Democracy and openness appear to be powerful predictors of the level and composition of education spending. The traditional model proposes that the extent of popular representation is the key determinant of education spending and implies that the public's preferences will be properly endorsed by the legislature and executive branches of government (Ansell, 2008).

The components of the policy measures that better reflect the underlying principles of popular representation and a responsive executive have the strongest and most robust effects on education spending. There is no evidence that dictatorships with stable succession, such as monarchies, have higher spending than do unstable tyrannies. Cross-national measures of the responsiveness of the skill premium to the supply of education and the technology transfer would provide more accurate substitutions. Research on the impact of capital mobility and foreign direct investment might also bring to light an understanding of the channels through which globalization affects education spending (Ansell, 2008).

Trade liberalization is often perceived as the ultimate way to promote international trade. It is common for researchers to estimate a regression between exports and economic performance and then interpret the results as evidence for the benefits of trade liberalization. Many researchers estimate correlations between alternative measures of trade policies and economic performance by making an implicit assumption about the link between trade policies and trade performance. Several arguments have been produced as to why trade liberalization promotes economic growth. The most common is the increasing specialization and efficient resource allocation, greater competition, and the increase in the direction of

knowledge and investment. As well as the technological progression, capital accumulation, and reducing transaction costs. Even if the above arguments are correct, the benefits are unlikely to materialize if trade liberalization does not lead to higher trade openness (Subasat, 2008).

It still needs to be proven that trade openness leads to superior economic performance and whether trade liberalization leads to superior trade performance. In theory there is a connection between liberal trade policies and trade openness. The neo-liberal description derives from the traditional comparative advantage of “trade theory.” In this model, the liberalization of trade increases exports and imports by allowing the specialization based upon a comparative advantage. In this view, trade liberalization, and export-promotion are equal and also that trade liberalization necessarily results in trade openness (Subasat, 2008).

Assuming liberalization of a country’s own imports (reducing its protectionist policies) will increase its exports. As trade liberalization and international competition eliminates uncompetitive sectors and the price modifications guarantee that sectors with comparative advantage succeed. A key aspect of this theory is that the full employment of all resources. This means that exports and import substitutions productions compete over limited resources. Resources must be removed from unproductive sectors and be employed in sectors where comparative advantage exists. Import exchange is an inward looking policy with state intervention whereas export promotion is an outward looking policy requiring liberal trade policies. These two policies are limited and incompatible because policy makers must choose between liberal and outward looking policies and inward looking policies (Subasat, 2008). The increasing global integration of economic activities is connected with significant changes in the innovation. The emerging knowledge based economy is rejected by the

change from scientific and technology based innovation processes to new forms of knowledge creation. The new understanding of innovation discussed within the framework of the knowledge based economy goes far beyond the linear models that have long been used in innovation theory and in regional economics to explain innovation processes in high-tech industries (Strambach, 2002).

Recently a systemic process of understanding innovation has emerged in which evolutionary institutional economics significantly contributed. Innovation is to be understood as the result of cumulative dynamic interaction and learning processes involving many participants. In this context, innovation is seen as a social, spatially embedded, and an interactive learning process that cannot be understood independently of its institution. The current view of modern systems is concerned with understanding the general context of the generation. The new process uses diffusion, adaptation, and evaluation of new knowledge which determines the innovativeness of national and regional economies (Strambach, 2002).

The concept of technological progress is not new in economic theory. It is only significant when considering the dominant role given to technological progress by classical economists, such as Karl Marx and Joseph Schumpeter. The realization by economists have always been aware of the importance of innovation and accumulated accumulation for long-term growth. Public knowledge is also enhanced by research performed at universities and research institutes. Their output in the form of knowledge is often published in scientific journals or transmitted through channels such as conferences. This improves the overall knowledge stock in the economy and encourages innovative actions. Universities educate individuals who enter the labor force and by educating the labor force that individuals become more productive as individuals have obtained a higher skill level. These skills can be

applied in both the manufacturing and the research aspects of organizations. The hope is that by employing skilled individuals, labor productivity levels are expected to increase. This will then lead to higher levels of innovative activities (Soete & Ter Weel, 1999).

These individuals can also be employed at the universities. Employing them at universities leads to positive effects on public knowledge, while employing skilled individuals. This indirectly affects the stock of public knowledge through the effort put in innovative activities. The rise of free trade and corporate expansion are among the major factors encouraging the explosion of globalization. Without strict government trade restrictions, countries are free to trade goods and services with others, regardless of their political ideologies. Trade has also become easier with large scale trade federations that theoretically place even the richest countries in the same line with the poorest. Globalization has changed Keynesian economics. This principle calls for government spending in case of a recession or depression to improve the economy and with the increased globalization; government spending is not a practical solution for a recession or other economic problems for nations (Soete & Ter Weel, 1999).

Education needs to be a priority along with job training to ensure the financial stability of future generations. Citizens should also look for the government for retraining programs and social welfare in the case of job layoffs. Although the U.S. still has some of the world's best higher education institutions, the quality of its middle and high schools is not comparable. The only way to ensure economic survival is through improving the quality of education, healthcare, and other social programs to prepare global citizens for competition in rapidly changing global markets. The best strategy for workers to avoid being outsourced is to make a commitment to relevant higher education. Milton Friedman states that "it is not

employment stability, but employability that is going to be necessary in the near future” (Friedman, 2005, p. 284-293).

Everyone is going to have to be more flexible and be willing to be retrained to fit into new situations when old systems fail or no longer are available. Friedman refers to jobs that are less likely to be outsourced as “untouchable” and those who know how to learn high-level value-added skills become the least affected by the implementing of globalization. Even though the job market would change, the job growth in other sectors could be promoted, or new sectors stimulated through job training. The does not rely on the government, but provides ways to continue working in the rapidly changing economy. As factories close and industries move to other countries, investments in education and job training ensures employability and lessens the negative impacts of globalization (Milakovich, 2006).

Education policy resembles the proverbial magic bullet. In the developing world, numerous studies have shown a powerful and robust effect of education on economic growth. In developed states, politicians exalt the benefits of education policy. Political economists have developed a broad array of theories about variation in government spending, emphasizing its redistributive and insurance roles. The analyses are less useful in terms when examining educational spending and the structure of spending determines the impact of education.

Education has powerful labor market effects. Expanding the supply of education increases the relative abundance of skilled labor and thus potentially reduces skilled wages relative to unskilled wages. A system of education spending which connects these labor market effects political preferences. It is considerably more complex than income transfers. The current body of literature on the political economy of public education spending has

confirmed that there is a positive effect of democracy on educational outcomes. The literature presents a redistributive politics of education and does not contain the ability to target education differentially or with education's effects on the labor market.

With the expanded access to public education benefits the middle class and poor. The democratization leads to increased public education spending, reducing private education spending, and a focus on primary education rather than tertiary education. Open nations will spend more capital on education and in a closed economy the increased supply of education will reduce the rate of return to educated workers. This creates strong incentives for the elite to try to restrain education spending in autarkies. In an open economy, educated individuals can sell their product to foreign buyers; hence an expansion of education does not necessarily reduce skilled wages. When openness leads to technology transfer there will be an increased demand for education which allows for companies to implement skilled foreign technologies (Ansell, 2008).

Openness also affects the composition of educational spending as developing nations change their spending from tertiary to primary education and the reverse occurring in developed states. The strong redistributive impact of education spending explains why poorer democracies prefer to fund public education more heavily. Democracies are also more likely shift their spending to primary education and away from tertiary education and private education. This impact of an open policy is accompanied by the positive effect of an open economy on education spending. Individuals can provide their skills to a foreign buyer through free trade. Globalization facilitates technology transfer and skill based technological adaptation increases the demand for education (Ansell, 2008).

Education is often recommended as a policy "cure-all" for both developing and developed nations. The integration of political and labor market constraints and the analysis of education policy. This is significant in stressing the importance of guiding money to education in developing nations. The impact of China and India's entry into global markets will contribute to a new region of development (Ansell, 2008). International institutions, such as The World Bank, provide advice for development economists which have increasingly focused on targeting development aid on education. Using education as a developmental policy will differ between dictatorships and democracies. Dictatorships may have a vested interest in curtailing foreign aid marked for education and will instead direct the funds to their preferred political constituencies (Ansell, 2008).

Education policy cannot be separated from countries' labor markets, especially integrating into the global economy. Expanding education in dictatorships may produce only educated unemployment or a collapse in the wage returns to education. Autocracies in developing nations usually target education in areas of comparative disadvantage, typically in higher education. Policies on educational spending must be adjusted on a nation's ability to employ educated labor and the political incentives of the government (Ansell, 2008).

Finally, it is worth considering the systemic effect of the recent expansion of education spending in India, China, and other developing Eastern nations. While Western analysts emphasize the size of Chinese and Indian college cohorts, this surge is small compared to the size of the spending increases in primary and secondary education that have accompanied China and India's entry into the global market. The size of their spending may in time be lowered because of the domestic skill supply, even offset, by global market

conditions. The domestic skill supply in India and China alters global skill supply and potentially reducing the returns to skill worldwide.

The rise of China and India is not only cause for concern for advanced industrial nations. A collapse in the global skills could undermine the push for increased education spending in the developing world and overwhelm emerging developmental strategies. Further analysis of Chinese and Indian education from primary to postgraduate education, would aid in identifying which groups are most likely to be successful in globalization. As the West's richness of human capital is challenged by the world, the domestic politics of education in China and India is going to have global and political consequences. This future development in turn may lead to a conflict of high-skilled protectionism between nations (Ansell, 2008).

For the advanced industrialized nations, knowledge is becoming the only resource that is capable of producing a competitive advantage with continued growth and prosperity. The appreciation of the creation and dissemination of knowledge is important for policy makers and businesses in the emerging knowledge based economies. A nation's action can do a lot to encourage the developmental process of knowledge based action in a learning economy (Howells & Roberts, 2000). After developing a theoretical model that yields a specific growth equation to estimate, William F. Blankenau, Nicole B. Simpson, and Marc Tomljanovich (2007) believe a positive connection exists between educational expenditures and growth for developed countries. This relationship is sensitive to the imposition of the government budget constraint. In their research, they found no substantial progress in public education expenditures are not taken into consideration and the inability of some studies to find a robust relationship between public education spending and growth may reflect a failure to properly account for the method of finance.

Standard economic theory states that higher education does result in an excess of positive externalities. An educated individual benefits and contributes to society by producing improved goods, better services, paying taxes, and subsequently, to a better government (Mankiw, 1998). There is little doubt that the value of higher education gives positive contributions to society. The educated individual benefits by having more opportunities for a better career and the ability to earn more money. Higher education preserves the features of a public good and the private benefits to students are apparent as well. Because of this, it is believed that higher education should be paid for by the students before embarking on his or her education and or upon graduation. The value is not part of the free education, but rather be related to the ability of the higher education system to provide all the desires of the students, in spite of their socio-economical background (Barr, 2004). In most European countries, government policies have not been particularly successful in encouraging students from disadvantaged socio-economic backgrounds to attend higher education opportunities (Ischinger, 2006; Jongbloed, 2004; Barr, 2004). The evidence from the research demonstrates that over the past twenty years it has not helped the public debate except in a few countries. Sadly, the broad questioning of the role of public funding in higher education is lacking in society (Fisher, 2006). This topic is never discussed by university officials and politicians. The discussions typically are around the idea as to how to evaluate value of an individual's education and compare it to the benefits accumulated by the graduate. In doing so, it should not be difficult to share the expenditures fairly. Nations would have a way to internalize the positive externalities derived from education by evaluating the demand of higher education and introduce the funding that moves the balance point closer to the desired outcome. The value placed by nations on the positive externalities

of higher education can be taken from the amount of the contribution. Apart from the Scandinavian nations, OECD countries spend in general between 0.8 and 1.5 percent of their gross domestic product (GDP) in subsidizing higher education, with the OECD average situated at 1.3 percent. Nations make provisions for students to pay their fair share even though the differences in the amount dispersed are significant. Most OECD countries charge nominal fees for public higher education services, while a small number of them allow for a larger contribution from the students and typically offer loans to support further continuation of a college education (Docampo, 2007).

There are a small number of nations whose contributions to higher education exceed significantly the OECD average, obviously, those nations that place a larger value on the returns of higher education than most. The Scandinavian nations assign a high social value to education and particularly higher education. Other nations by stating the entitlement to higher education as a universal right while under-financing the higher education sector makes it a lower social value to education. This practice contradicts the practice as to what the politicians are saying. It makes it hard to question the current practices and debating the financing of higher education is not solved (Docampo, 2007).

Very few studies in recent years have emphasized the implications of the allocation of educational expenditures for the economy. For instance, Lloyd-Ellis (2000) shows that a reallocation of expenditures from basic to higher education reduces enrolments in higher education and increases income inequality. The impact of the allocation of public resources on educational growth demonstrates a tension between the trickle-down effects of higher education and the positive enrolment effects of education and would reduce income inequality within nations (Mimoun & Raies, 2010).

The typical policies that favor education produce the usual redistribution from top to bottom. A policy that favors the advance education results in reversal of the redistribution of funds from bottom to the top. Studies have shown that that capital markets are perfect and that deciding about education is independent from the distribution of wealth. Also, an important issue that is not considered is the issue mobility for the students. With the presumption that credit markets are imperfect and the understanding of economic mobility is inserted by assuming heterogeneity of individuals' and the ability for lower income individuals to borrow. The effects of moving the funds from basic to higher education based upon the earning of the degree depends on the negative effect on the liquidity constraints for the poor and the positive effect on the quality of education received. Lower mobility and lower levels of wealth that are held by rich and poor when the allocations of expenditures in favor of advanced education and the additional transfers of public resources from basic to higher education results in the long run in a lower portion skilled population (Mimoun and Raies, 2010).

Openness in Higher Education

Openness Learning Systems

The problem is that open source/access models are struggling against the neoliberal concept of privatization and monopolization. I argue that open learning systems have a great impact on higher education. Higher education is being driven by the application of technology, especially online technology. "Open education suggests, by a metaphorical extension, a removal of obstacles so that the benefits of education are available to everyone" (Egan, 1975, p. 24). Open education brings with it its own set of goals, values, and aspirations that transcend any specific projects or functional quality of technology. Open

education, open content, and open source as a collective idea is often discussed as a means to liberation, empowerment, and democratization. Equal access to current knowledge and a standing invitation to everyone to participate in advancing new ideas are common themes of the open education movement (Kahle, 2008). Open universities are inherently innovative and are part of their respective societies.

Open universities represent clear principles of nations and can provide the growth of human capital. Unlike traditional forms of education, open universities are more aware of the needs of the society and have the capacity to evolve (Tait, 2008). One of the most popular technology applications for improving open education is the Course Management System, also referred to as a Learning Management System. Some of the software names include Blackboard, WebCT, and the open source solutions, most notably Moodle. Open source software is developed by a community of users and distributed for others to use without any fees. The software applications are freely shared as well as the programming source code for the web application. This allows everyone to develop extensions, plug-ins, and fixes to any software problems (Caudill, 2009). The role of educational programs is to address students' needs in a variety of learning contexts and provide an opportunity which comes from developments in e-learning technologies. These opportunities extend from campus based programs which combine traditional learning experiences with online learning experiences. In doing so, it presents an opportunity for students to learner at his or her convenience. This provides more time and the ability to study can translate into learning can occur anywhere and anytime (Bensona & Samarawickrema, 2009).

The internet has revolutionized how researchers from various disciplines have the ability to collaborate over long distances and there are the growing interdisciplinary

approaches. Faculty members are using for the integration of subjects and discovery of new knowledge. The people are demanding the right to acquire knowledge and be part of higher education. Higher education has the ability to change mass systems of education regarding student diversity, variety of courses, institutional governance, and ideological orientation. Institutions are increasingly facing complicated problems of meeting the needs for productive employment and using information technologies in programs. Institutions must be flexible in operating their lifelong learning programs which encourages global competitiveness, networking, and partnerships among their students and users (Heydenrych et al, 2003).

It has become necessary for universities to restructure, and reform their educational practices. A large number of organizations, educational institutes, and universities offer a variety of methods to meet the needs of all students. Institutions are providing evening courses, weekend classes, distance education, and web-based education. Open learning through distance education is becoming more accepted and recognized as a new mode of education for meeting the emerging demands of students. Communication becomes the critical issue in higher education and through the use of technology; it provides easier and broader access to communication avenues (Charalambos et al, 2004).

A movement in educational training and professional development is the use of network technologies for distributed learning and the creation of online learning communities. Developing technologies require institutions and educators to reconsider their views about teaching and learning. Using computer networks, distributed multimedia systems, education, and training, learning is now distributed among people, artifacts, communities and nations around the world. In the current age of the information economy and knowledge management, it is essential for organizations, institutions, and nations to

invest in continuing education in order to be competitive. The interest in online communities is growing and higher education institutions are using these online communities for establishing and building lifelong learning for their students as well as building their continuing education programs (Charalambos et al, 2004).

Michael Peters (Peters et al, 2009) states: “The rapid creation of new knowledge and the improvement of access to the knowledge bases thus constituted, in every possible way (education, training, transfer of technological knowledge, diffusion of innovations) are factors increasing economic efficiency, innovation, the quality of goods and services, and the equity between individuals, social categories, and generations” (p. 7). Considerable progress in the area of open education must be made to enable today’s society and the future of higher education to take full advantage of the potential of online learning and teaching. The ability for individuals to continue the growth and use of open education and its new creations is essential for education to prosper in this growing technological evolution. Open source initiatives have enabled the growth of new models of production and innovation. The public and non-profit sectors have called for alternative approaches dedicated to public knowledge redistribution and dissemination. Distributed peer-to-peer knowledge systems challenge the quality for profit organizations. Open access in many disciplines has focused on making peer-reviewed online research and scholarship (including digitized back issues) freely accessible to a broader population of users. The openness of many disciplines demonstrates a combination of the private-collective model of innovation in which both elements of proprietary and public models of knowledge production can occur and work together seamlessly (von Hippel & von Krogh, 2003; von Krogh & von Hippel, 2003).

The use of information, technology, and the internet on campuses in open education is everywhere. Students need to learn and adjust to e-learning practices because faculty's use in-class and out-of-classroom environments in their teaching methods. For faculty who operate in both environments, students are expected to download course materials from dedicated course websites, access course management systems, and provide presentations. I believe e-learning environments have the potential to facilitate the inclusion of all types of students within classrooms (Fichten et al, 2009).

As Amrit Tiwana (2003) states, it is through the continuation of P2P networking that the idea of openness has the facility to transform education and redefine what constitutes a proper educational environment. Each person that is connected to the internet and communicates with other individuals within his or her digital environment and knowledge interactions become possible only among individuals who agree to work together. Peer-to-peer networking supports knowledge management by adopting the conventional face-to-face personal communication. The groups of people who form peer-to-peer networks have the ability to utilize the expertise of the group members who are participating.

By enabling informal communications among individuals, peer-to peer networks allow for peers' expertise and tacit expertise to exist. Providing access enables new and instantaneous connections among themselves to serve as the base for innovative communication. Individuals have the ability to share their information, expertise, and content in P2P networks and as P2P networks expand and the opportunities for value creation exist. With each additional member who participates in P2P networks, the network's potential value for users will be increased. The P2P connections present opportunities for collaborative

knowledge integration in autonomous groups. The networks have the ability to suddenly emerge and disappear when they are no longer of value to the collective (Tiwana, 2003).

Over the past two decades, there have been enormous technological changes and the difference between open and a distance education practitioner is narrowing. The technological change is altering the very nature of open and distance education. The implementation of online education has involved static learning resources to students who were supported by mechanisms that fostered face-to-face tutors or video-conferencing or to minimal approaches for feedback. New technology provides the possibilities for educators and students to participate in new forms of open education. The software applications also challenge the costs of online education. Open education is relatively cheap, even though it has high fixed costs and its variable costs are low. The hardware, software, support systems and related training for technology based delivery increases the fixed costs. The hope is that the expenditures decrease over time as the technology continues to improve and becomes more readily available.

Higher education institutions are establishing e-learning systems and providing students with easy online access and educational learning environments. This trend is growing because of the continual changes in students' backgrounds and technological. There are still problems in the ability to integrate their instructional technology into higher education. There have been many higher educational online institutions that have failed because the high cost of technology and bad decisions (Park, 2009).

Technology allows students greater access in developed countries and most of the national expenses is the delivering the educational material. The use of new communication and computing technologies in open education raises expenditures. Universities are facing

pressures to change and adapt with the development of new open education programs and the new forms of students that become important contributors to institutions. Implementing educational changes for institutions with a commitment to open education will make a contribution to institutions who consider implementing open and on campus educational practices. How institutions respond to this change depends upon the level and type of involvement of institutional control (King, 2001).

Declining enrollments, decreased state support, increased costs, and increased competition for students are realities that have led to academia becoming increasingly commercialized and the increased pressure on institutions to develop marketing plans and new business models of open educational environment. The competition by institutions for student's money is very real and a serious matter. Resources in higher education are always scarce. Institutions having tight budgets and increased scrutiny in spending require that every dollar needs to be spent wisely and of course implemented with the greatest probability for maximized return. The heart of the changing higher educational system is being able to afford the institutional operations costs, salaries, and tuition still remains an underling issue. Institutions must continue to be aware of and embrace multimedia, e-learning, and open learning systems, otherwise, they face a crisis of students willing to pay for their education. The European University Association believes the many processes and practices of central concerns to higher education institutions tend to be oriented to the past rather than the future because the policies created are based on indicators of past performance (EUA, 2007). In addition, institutions need to change their policy recommendations for the ailing economies (Alexander, 2001).

The open educational structure of higher education will force institutions to drive down costs. It is becoming a requirement for all individuals in societies to be educated. This poses the obvious question; can we achieve an economically maintainable educational system of higher education without a massive increase in government investment in higher education? Scholars argue that it can be solved, but requires greater involvement of the for-profit institutions and by encouraging existing not-for-profit universities to establish for-profit campuses. For-profit institutions will have to emphasize quality and convenience of undergraduate teaching and focus on high demand, timely economical academic disciplines. This requires traditional higher education institutions to identify that conducting research is not essential to be counted as a traditional institution (Chipman, 2002).

Higher education is undergoing a change from supply-driven to demand-driven, and the demand for greater relevance and accountability. This change has influenced technology, competition, and for institutions to be self-sustaining. Universities are looking for solutions to these challenges. Educational opportunities are being produced for millions of learners to be able to learn through these new technological ways. Open learning is increasing access, reducing costs, and placing the learner at the center of the educational environment. Institutions are being forced to respond to the nature of open learning technologies. In a highly competitive environment, increased investment in technology by universities will improve their chances in competing with other institutions. The reaction by institutions is to start up their own respective open educational programs. The rising costs in the pursuit of a competitive advantage leads to unnecessary and wasteful investments by institutions and departments. There is a vast range of knowledge on teaching and open learning and there are tools to enhance and enrich open learning. There will always be a need for changes in our

traditional institutions and the different ways of teaching, learning, and providing greater educational opportunities (Latchem & Hanna, 2002).

Online education has its challengers. Some areas of academia have strong opposition. Some individuals predict that online education will lead to de-professionalization of education by converting of what is essentially an intellectual activity into commodity form for sale. It is feared as a threat to faculty member's autonomy, intellectual property, and job security. Some worries may be well founded and that measures need be taken to assure that education retains its unique position as realm of freedom, debate, inquiry, and learning (Golosinski, 2002). It is important that faculty and administrators begin to realize the economic fallout by not using open education and P2P networking in their institutions. Even though there are high initial infrastructure costs, it provides a better learning environment for the students that they hope to serve.

The Open Educational Resources (OER) movement has the potential to provide broader access to higher education and to improve the quality of higher education for various learners. Many OER plans have focused on making the educational content that supports existing traditional forms of instruction openly and available. The internet overcomes problems of access by serving as an intermediate for freely content. Making information available is based on the idea that education and discovery are at its best when knowledge and information openly distributed. These OER projects enable the ability for open access to educational materials (Thille, 2008). To be able to implement open education, it is essential to understand the characteristics and how open education can be applied in the educational environment.

Applications

A critical understanding of open education is the practical applications that result from open education. A large number of organizations, educational institutes, and universities offer advanced qualifications in different delivery methodologies to suit variety of students. Besides traditional classroom learning, the courses are also delivered as evening classes and or weekend classes, distance education, web-based education, etc. Computers play a major role in today's education. Open learning through distance education has come to be accepted as a well-recognized mode of education and training relevant to, and necessary for, meeting the emerging demands. Communication is a key component in higher education, and one of the chief functions of technology in education is to provide more options and broader access to communication channels.

Open Courseware

Learning is a complex process with many different factors. However, from an analysis of learning theory, it is possible to identify conditions that are more likely to promote learning. This includes supporting the learner when relating to new information to existing knowledge, using or applying the new information, and being able to clarify their own ideas through the process of self-reflection and discussion (Cairncross & Mannion, 2001). Educators understand that engaging learners allows for a deeper understanding and relationship with information. Learning becomes meaningful when students co-create and develop their own forms of knowledge. When students take ownership of their learning they given opportunities to interact with information, make connections, and make new meanings. Creating knowledge is relevant to students' lives when teachers facilitate learning through

skilled pedagogy. Students are naturally motivated through effective pedagogical and technological use (Nelson, Christopher, and Mims, 2009).

There are no established visions as to what the future holds in the creative economy, but I will suggest that higher education will be transformed. “The rapid creation of new knowledge and the improvement of access to the knowledge bases thus constituted, in every possible way (education, training, transfer of technological knowledge, diffusion of innovations) are factors increasing economic efficiency, innovation, the quality of goods and services, and the equity between individuals, social categories, and generations” (Peters et al, 2009, p. 7). Considerable progress must still be made to enable today’s society and the future of the creative economy to take full advantage of the potential of online learning and teaching.

The implication for educational programs is to address students’ needs in a variety of learning contexts given the expanded opportunities that have advanced in e-learning technologies. These range from campus-based programs that combine environments of face-to-face learning experiences with online learning experiences. Where the learning occurs at the learner’s convenience and has the freedom of the time and location. This educational experience provides an opportunity for learning to occur anywhere and anytime (Bensona & Samarawickrema, 2009).

Michael Peters (2009) states “The rapid creation of new knowledge and the improvement of access to the knowledge bases thus constituted, in every possible way (education, training, transfer of technological knowledge, diffusion of innovations) are factors increasing economic efficiency, innovation, the quality of goods and services, and the equity between individuals, social categories, and generations” (p. 7). Considerable progress

in the area of open education must be made to enable today's society and the future of higher education to take full advantage of the potential of online learning and teaching. The ability for individuals to continue the growth and use of open education and its new creations is essential for education to prosper in this growing technological evolution.

E-Learning

Another critical aspect of open education is the e-learning form of higher education. Traditional institutions have realized that their traditional forms of education may not be the best version of higher education. Institutions' using traditional teaching methods, distance education, and online education, face the challenges of incorporating all forms of technology into their teaching practices. Colleges and universities are also facing strong competition from the new online and for profit universities. The online institutions copy the traditional universities while the for-profit universities provide instant training for their students (Heydenrych 2000).

The virtual learning environments have extended classroom learning environments. Educational content is also available using email, instant messaging, and chat rooms. Faculty and administrators are now more readily accessible for help through these communication services (Sloep et al, 2005). Today's college students have made technology a part of life and they use the internet, e-mail, instant messaging, blogs, and social networking at higher rates than individuals from any other generation (Junco & Cole-Avent, 2008). For students who have participated in earlier forms of open education, regular opportunities for collaborative and cooperative work were simply not available. Human history is characterized by the technological innovation and developments in technology which now enables learners who

study at a distance to participate in ongoing learning conversations with other students, with the ability to share interests and commitments (Littleton & Whitelock, (2005).

Colleges and universities are investing heavily in the updating of their online instructional resources, computer labs, and library holdings. Most institutions do not investigate the factors that are influenced with online student satisfaction or learning outcomes. Faculty and administrators view open education as an innovation which applicable to all types of educational situations. Online education can be a superior mode of instruction as long as it fits the right set of learners with specific learning styles and it is essential for instructors to provide timely, helpful feedback (Eom, Wen, & Ashill, 2006).

The institutions that provide e-learning opportunities for students face difficulties in applying the programs and its effectiveness is being accepted by the courses offered from the institutions. Faculty cannot offer courses that do not to translate well to online formats and expect positive results. It is because of this action that students' become irritated during online education and look to other courses/programs that provide better experiences. The result of courses and programs not providing effective learning opportunities forces the programs to have a more student-centered research of online education. Acknowledging the elements related to students acceptance of technology in the classroom continues to be an important issue with the increasing speed of new and different technologies into learning environments (Park, 2009).

The demand for online education will continue to gain momentum. Individuals participating in online education are sometimes professionals who are trying to stay current in their fields' of practice, some are educated individuals with a desire to expand their knowledge, and there are countless others of knowledge workers who must learn new ways

of doing their respective jobs. I believe online forms of education can be more time and cost efficient than the traditional classroom. Online courses allow students the opportunity to replay lectures and view specific course materials until they fully understand the course content at their desired time of use. It provides a one on one teacher-student interactions that provides opportunities for students to be more engaged in the learning process (Golosinski, 2002).

Creators and providers of e-learning environments need to be more understanding of how students perceive and react to elements of e-learning as well as how to apply an e-learning pedagogy to enhance learning environments. Knowing students' intentions and understanding the factors that influence students' beliefs about e-learning can help shape administrators thinking and create opportunities for students to use e-learning environments. It is essential to conduct research that deals more intensively with learners' perception of e-learning (Park, 2009). There has to be a continual assessment of student use and success of e-learning programs, otherwise, future generations of college students will not be engaged in the learning process.

Open learning is becoming an important part of the mainstream of educational systems worldwide with the hopes of creating knowledge-based societies and the goals of producing lifelong education. As Weiyuan Zhang and Tak-Kay Ng (2006) state that technological and e-learning services need to be available at any time and in multiple forms. It should encourage individuals to continue to develop their skills and competencies throughout their lives. Open learning provides the desired flexibility and quality education, and most importantly, provides education for all and education for individuals possible. Open education needs to assist people of any age and at any point in their lives, and allows users to

take part in different forms of educational training and the ability to explore new career choices.

As higher education is increasing its e-learning operations, there has been a change in the kinds of students. Institutions identify part-time adult learners as becoming the new majority, with non-traditional working students over the age of 26 now comprising over 50% of the American post-secondary student population. This group has also become the largest users for online learning. The for-profit colleges that specialize in e-learning online degrees are becoming a new and powerful player in the game of higher education. Much of their success is attributed to their focus on marketing to adults, understanding the needs of their students and their customer service approach to education is changing the educational landscape (Symonds, 2003).

Higher education is constantly evolving as it seeks to address the recurrent changes in educational forms and standards for implementation. The standards are being driven by growing student expenses and enormous variety of educational opportunities for students. There have been an increasing number of online education programs. With an increasing number new institution there is a need to use a variety of information and communication technologies. There is an emphasis placed on using technology and which has brought the need to develop online educational materials, and the use of e-learning opportunities for globally and local consumption (Mills, Eyre, & Harvey, 2005).

Peer-to-Peer

A critical aspect of open learning is different and systematic approach in understanding peer-to-peer interactions. The global reach of digital technologies and the rising influences of networked collaboration constitute an emergent mode of production that

is reshaping industrial societies today. Just as new systems of meaning making emerged with the printing press, Information Communication Technology (ICT) networks are generating new cultural forms, and reorganizing the basic mechanisms of cultural power. Moving beyond the simple “one-to-many” transmission of information systems of mass production, ICT networks are making possible a unique form of “many-to-many” collaboration.

These peer-to-peer (P2P) systems form networks in which the parts of the network are interdependent. In P2P projects like open source software for example, resources are contributed spontaneously. The political expert is "organic," emerging and receding with the domain-based expertise needed to complete specific tasks. In these “democratic ecologies,” authority does not go away, but nor does settle in permanent socio-political structure. It is the production that is dependent upon the voluntary participation of partners (Bauwens, 2005).

The computer creates the change for producing from capital to innovation. While top-down systems of control could at one time influence economic production through centralized innovation. New technology has challenged many industries today to develop new networks of innovation. Beyond the command economic systems characterized by industrial production, ICT networks have the infrastructure to develop new modes of value-driven design and innovation. This socioeconomic restructuring is the critical importance of ICT networks to leveraging distributed creativity.

As Yochai Benkler (2006) demonstrated, ICT networks are giving rise to a democratic shift that is opening cultural life to emergent modes of creativity and innovation. This trend is in the context of software and information production (most notably in the free and open-source software movement) but also physical production in the context of user-led

innovation (von Hippel, 2005). Underlying this new mode of production is the critical importance of digital networks as platforms for creative collaboration.

Bauwens (2006), for example, has outlined a strong case for the rise of P2P systems as a new mode of production. As he points out, what makes peer production systems particularly different is that they do not rely on monetary incentives or fixed hierarchical organization. Unlike closed hierarchical systems, P2P networks are open systems that depend upon permeable boundaries. Loosely defined, a hierarchy is a vertical system of ranking and organizing in which each component element is subordinate to another element in a descending ladder or pyramid. While closed hierarchical systems have been critical to managing social development throughout much of human history, their value in an age of global networks is now very much in doubt. Consider, for example, the tremendous growth of the Internet. Taken as a whole, the World Wide Web represents a global socio-technological network in which the knowledge, resources, and computing power of billions of people are coming together into a massive collective force.

Tapscott and Williams (2006) argue, that peer production networks reflect a new mode of human socio-political organization that is critical to understanding social networks. Unlike the top-down structures that are fundamental to industrial production, peer to peer networks depend on the complex networks. In P2P computer networks, for example, an infinite density of point-to-point connections enable any computer node to connect to any other without the need for mediation. In P2P networks such as open source software, resources are donated naturally. Formal authority is “organic” emerging and receding with the domain-based expertise needed to complete specific tasks. In these democratic production ecologies, authority does not disappear, but neither does it cohere as permanent hierarchical

structures. It is literally production that is dependent on the voluntary participation of partners.

According to Bauwens, the internet as a point-to-point network infrastructure enables “equipotentiality” in the design and development of commons-based production regimes. Labor is “permission-less” and bottom-up. P2P is neither hierarchy-less nor structure-less but is shaped by flexible “hierarchicalization,” which is entirely dependent on the free cooperation of autonomous agents. In P2P production systems, motivation is intrinsic and passion-based rather than an exchange of labor for financial reward. Projects are usually led by a core group of founders who head subgroups in a patchwork of specialized tasks. In P2P projects, all participants have access to the knowledge of what the others are doing, and the vertical knowledge of the project as a whole. As new skill levels evolve, peer contributors move from the periphery to the core without the need for fixed hierarchies or external mediation.

By “importing” energy across permeable boundaries, open systems in nature are continuously being nourished. This capacity for self-creation provides open systems in nature their incredible capacity for growth. When this same boundary permeability is translated into the domain of human socio-economic production, it manifests as a continually evolving collective intelligence. Much as other complex open systems, democratic production systems avoid “creative entropy” by continually absorbing energy and resources from new participants. As free labor is absorbed into shared economic practices, the creative potential for self-organization is continually replenished.

Benkler (2006) describes this emerging mode of production as commons-based social production. While traditional systems of production depend on closed proprietary structures,

commons-based production utilizes open networks to harness the creative energy of collective intelligence. For Benkler, the key to understanding this democratic cultural practice is that no single entity “owns” the product or manages its direction. While this new mode of production may depend on the technological capacity of networks and it is ultimately, configured by an emergent socio-political structure grounded in open systems.

University administrators must learn and interact with technology, which will to increase student engagement. Administrators have only focused on reacting to negative uses of technology by students, instead of using technology for enhancing educational and social outcomes. Understanding technology and addressing the need to incorporate technology into programs and services is one of the more complicated trends that administrators have encountered. Students expect and demand immediate interactions based upon their daily use of technology and require their administrators to do the same (Junco & Cole-Avent, 2008). The digital environment offers many opportunities for a creative and collaborative engagement of learners within a digital content. The tools and services used in the learning process are evolving. The collaborative creation, evaluation and sharing of open content and learning experiences is essential. A new generation of easy web-based tools and services makes this easier than ever before (Schaffert & Geser, 2008).

Open Publishing

The term “open access” is the name given to Stevan Hamad's free access model for the publication of peer-reviewed, full-text scholarly articles in digital form free of charge to users. The concept is based on the nature of academic authorship and the authors are primarily interested in the wide distribution of their publications and seek no direct financial reward. Trade authors seek to profit from their work and protect it from unauthorized use.

Open access means that access to full-text academic works is available free of charge. C.L. Borgman proposes three essential elements to define the term 'access': connectivity, content, and usability. Connectivity is the physical connection to use computer networks. Content is the information residing on those computer networks and usability is ease of use for both. The meaning of open access includes both accesses to the content and free availability of that content (Park & Quin, 2007).

Recently, there has been a change in scholarly communication networks. Among them are emerging open-access journals. Open-access (OA) journals are one form of electronic academic communication that presents distinct and different characteristics from traditional access electronic journals that are subscription based. Open access journals are free to readers and may be a factor, since they have a higher degree of availability than traditional journals. Open access journals are not free journals; there are significant costs for the peer-review process and production of a journal, even if that cost may be lower than for traditional paper-based journals. Open access journals will only survive if they can raise sufficient funds to cover the costs of publication. One of the currently prominent revenue models is charging authors a publication fee instead of charging readers a subscription fee. Many open access journals are not highly regarded in their academic fields because of their virtual environment; some consider them not authentic to the academia and its rigors (Park & Quin, 2007).

Electronic publishing, digital processing of information and digital storage of large sets of data are among the many innovations made possible by the application of Information and Communication Technologies (ICT). The electronic journal, electronic abstracting, indexing services, and electronic databases of bibliographic information are examples

innovations. Publication of articles in journals became the prime indicator of professional standing for researchers and the organizations that employed them. The peer-reviewed journal fulfilled other requirements such as author recognition, quality control, and the recording the progress of academia (Correia & Teixeira, 2005).

This environment has encouraged publishing models based on the internet technologies for formal and informal communication between educators. New publishing avenues have exceeded those existing in the traditional printed journals and the promoting rapid access to information existing publications for free. New electronic publishing models based on self-archiving have the potential to revolutionize scholarly communication and make it more efficient and effective. Self-archiving is a term used to mean make author-supplied document of research in a publicly accessible web site without any publishers' interference (Correia & Teixeira, 2005).

Authors and readers are quick to discover the advantages of open access, with the demonstration of increased readership and citations for work in open access. Academic publishers Elsevier and Springer are introducing million-dollar, thousand-title journal bundles to university libraries and they are also allowing authors to archive copies of published work on the authors' own websites or in open access archives. These publishers are also enabling authors to purchase open access for their articles in journals' online editions. Open access is not taking any one form economic models or conditions of access to a journal's content. Open access is a new beginning in process of opening academe and scholarship (Willinsky et al, 2007).

Commercial publishers' main arguments against open access involve economics, editorial quality, and advocacy of the existing system. In open access economics, publishers

emphasize high production costs for current journals, significant investments in electronic technologies, and development of publications in new subject areas. They challenge the economic viability of the "author-pay" model, noting studies shown that open access journals need to raise author fees or develop alternative revenue streams to remain sustainable. As is the commercial publishers, most nonprofit publishers argue against open access. They predict that academic societies will fold if their journals are forced to adopt this publishing model. Open access publications profit margins are low, and they blame commercial publishers for the excessive price increases. Nonprofit publishers also cite their operating of access to journal content six to twelve months after publication as evidence that more open access is not necessary. To develop websites for online journal content, many of these publishers use the services of Stanford University-based High Wire Press, a major player in the online scholarly publishing world. High Wire claims to have the world's largest collection of open access, high-impact scholarly research online because publishers offering free access to back files, which is typically after a six to twelve-month embargo period (Alber, 2006).

In considering the sustainability of open access publishing, it is important to consider both the macro and the micro economic perspective. Macro-economically speaking, things are pretty straightforward. The process involved in open access publishing is that there are no fundamentally new activities and no new costs compared to the traditional model. It is clear that open access to research is affordable and the costs are not much more than the system. Large scale movements to open access will greatly reduce the burden of subscriptions. There will be little, if any increased in costs. At a micro-economic level, there are significant practical challenges to be addressed and the most important is that the current

situation of increasing numbers of journals and increasing subscription prices, which means that library budgets are already stretched (Cockerill, 2006).

Librarians will continue to keep paying for subscriptions because the research concerned is now owned by publishers and one research article is not substitutable by another. If researchers need access to the articles in a subscription-only journal, libraries have little choice but to keep subscribing to the journal. A challenge is that because subscriptions tend to be purchased at an institutional and the cost of journal subscriptions is not always obvious to readers and authors. If article processing charges are payable directly by the author, then it is understandable that this may create a perceived obstacle to uptake of open access, unless authors are clearly advised by their funders that open access publishing is recommended and funds will be made available for it (Cockerill, 2006).

Open Archiving

Many librarians are vocal advocates for open access. It provides a way out of the journal price crisis and is a way out of allowing permissions crisis that impedes the use of digital resources. The crisis means that when they pay, libraries are hamstrung by licensing terms and software locks that prevent them from using electronic journals as in the same and free way that they may now use print journals. Open access would simplify the librarian's life considerably.

It became clear in the late 1990s that the usefulness of separate e-print repositories would be enhanced by the development of the interoperability between them. The movement called the Open Archives Initiative (OAI), which emerged from the Santa Fe Convention held in 1999, addresses this issue. The OAI goal is to create cross-searchable databases of research papers and make them freely available on the web by developing and promoting

standards that will facilitate the efficient dissemination of information and make individual e-print repositories possible (Correia & Teixeira, 2005).

Several models of self-publishing (sometimes called self-archiving) have been proposed, using the new enabling technologies as a means of returning the responsibility and ownership of scholarship to its creators. One of the key assumptions behind developing innovative publishing models for the academe is when scholars publish in peer-reviewed journals. They are not interested in monetary reward, but in having their work read, used, built-upon, and cited. Researchers and academics are aware that job opportunities, tenure, promotion and merit pay are all dependent on the attention their papers receive. Therefore, authors of journal articles seek impact instead of royalties (Correia & Teixeira, 2005).

The internet allows researchers to recognize that the ICTs gave them efficient ways to share results, to combat the rise in journal costs fast outpacing a library's ability to afford them, and to overcome the problems raised by the transfer of Intellectual Property Rights from author to publisher and to improve on slow traditional publishing. While several of their initiatives began for dissemination of preliminary results, a number of them have changed into a more formal way for the efficient sharing of research results among peers (Correia & Teixeira, 2005).

Self-archiving, which involves posting or publishing one's research output and documents in digital form, on private and public web space is increasingly popular in scholarly electronic publishing. The academe or scholarly community is using self-archiving to allow for better access, search ability, usability, and visibility of their research output with internet access. There needs to be exploration into the use, evaluate, and strengthen self-archiving, institutional repositories, and open access. Institutional repositories act as the

server which allows the world to interact with stories or content and enable the sharing of knowledge and creation for a better understanding. I think that enabling knowledge sharing should be our primary activity in our fields of academia (Ocholla, 2011).

In open access, copyright can be considered a barrier to self-archiving. Copyright should not be a problem because most scholarly journal publishers allow for some form of self-archiving and most academic authors should be able to self-archive. The greater part of the peer-reviewed literature in many disciplines continues to be restricted and unavailable because authors, having transferred copyright to the publisher, feel that they no longer have the right to self-archive. As time goes on the function of publishers gaining experience with electronic technologies, the number of publishers who allow self-archiving is gaining momentum. The ISI studies of open access journals suggest that over half of the journals and journal articles are produced by publishers who allow some form of self-archiving. Researchers have started to turn their attention to the self-archiving behaviors of faculty, given the rise in publisher acceptance of self-archiving and the growing number of digital repositories, (Coleman, 2006).

Copyright and open access has the ability to coincide. The findings tend to confirm this and that copyright is not a barrier to self-archiving. The majority of the ISI-ranked LIS journals do not prohibit self-archiving. Publishers have gained confidence with electronic publishing. When the preprint or post print is self-archived, publishers would like direction to the journal home page with full citations after publication. Authors should be excited that very few journals prohibit self-archiving. Scholars and researchers can intentionally adopt and deliberately pursue the policy of self-archiving while publishing in ISI-ranked journals and using digital repositories as for their own personal digital library. The field can be led by

the scholarly community which includes publishers with the goal of building the LIS commons, open access, and digital library services. In the process of its development and use, faculty members may also innovate and produce globally equitable, transparent, and sustainable models for scholarly publishing with the current system (Coleman, 2007).

There is some disagreement on the classification and naming of open access instruments. Open access archives are repositories in which copies of already published articles are deposited for free access by all. This is also referred to as self-archiving. The open access archives is not restricted to already-published articles, but may also encompass pre-prints, theses, dissertations, manuals, and teaching materials. Open access archives that are maintained by universities for works contributed by their staff and students are termed institutional repositories. In order for their contents to be accessible worldwide, open access archives have to be open access initiative, which guarantees that the information is available by any search engine (Lor, 2007).

Facilitating access to information for all indicates cooperation and sharing of the materials. This accounts for the desired interests for open access. It does not mean that Librarians are against publishers. Librarians do not think poorly of publishers and they do not dislike the money they make. This is acceptable as long as the prices that they charging are fairly related to the value they add. Archivists and librarians need publishers. Publishers also need librarians (Lor, 2007). Librarians grow the publishing market by promoting literacy, reading and information use and exposing users to their products. Librarians also provide publishers with reliable sales for certain categories of publications, a mechanism for the distribution of works no individual scholar could afford and the users who are authors, reviewers, editors, and readers. Librarians and publishers share a value in that information

makes a difference and how it is to be circulated. Open access will be an important factor in the evolution of scholarly publishing because both publishers and librarians will have a major role (Lor, 2007).

Open Journal Systems

Online availability of journals has intensified researcher's desire for more information. There are many ways to access information and tools for uncovering research that would otherwise have gone unnoticed. For some, it is unfathomable and tolerable that some information is still restricted online. Advocates for open access argue that the subscription-based journal model is hampering the free-flow of research to the public. By restricting access it damages creative ideas and innovations. Scholars who prefer traditional journals argue there is a risk research will escape in an uncontrolled fashion and make it hard to control. This will produce a homogeneous pool of un-reviewed research. This will result in a lack of structure and challenge the notion of peer review (Robinson, 2006).

Some of the open access enthusiasm derives from the perception that publishers and societies are making unjustifiable profits from journal publishing. There are thousands of journals published by societies, not-for-profits, and commercial companies. Blackwell, for example, is the world's leading publisher for societies and is viewed as an not-for-profit publisher. Many societies invest heavily in their communities by running conferences, educating members, funding public advocacy, providing information, and funding of research (Robinson, 2006).

Scholarly articles can be made freely available to potential readers in two main ways: self-archiving papers in electronic repositories or by publishing in open access journals. The costs of editorial expenses, peer review, and running servers are created by the authors or

their respective institutions. The open access model is also applied by several commercial publishers. In this model, authors or their institutions pay a fee to have their article published and the publisher then makes the article freely available electronically, after it is published. The Directory of Open Access Journals (DOAJ), produced by the Lund University Library (<http://www.doaj.org>), was created to increase the visibility and ease of use of open access journals. This promotes their increased usage and impact. The directory included 1532 peer-reviewed, scientific open access journals and covers all disciplines (Correia & Teixeira, 2005).

There are also many journals that are experimenting with hybrid models, offering open access models to authors who have the funds to pay. Many institutions are beginning to host their own electronic repositories of research. These public repositories ideally hold the final published versions of articles, but researchers are often only able to deposit the accepted unedited versions of their articles. This has led to concerns about different versions of manuscripts being present in the public domain. The repositories are adding an important avenue for public access to scholarly works (Barbour & Patterson, 2006).

Journals have an established role in the assessment of research. Researchers and their employers want their efforts to be other quality products and have the approval of experts. Publishers and societies have spent decades building the quality of their journals and establishing their reputations. Any researcher can publish on the web, but what scholars desire peer recognition, which is why authors value journal reputation when choosing where to publish (Robinson, 2006). For some, it will be hard to believe that open access to primary research will not have become the favored model of publishing. The challenge for all with an interest in publishing is to work out the way to get there. Any new ideas will need to identify

the fears of current publishers and academic societies over loss of revenue and at the same time not permitting the profitability of the existing model to hinder modernization. The issue of long-term sustainability of the digital archives currently being created is another problem that needs to be considered. The usability factor of how journals look and feel and in the way that scholarship is distributed and communicated online also is a problem that needs to be addressed. There can be little doubt that open access to information will be a benefit to authors, readers, and society (Barbour & Patterson, 2006).

Alongside this general misunderstanding about what open-access publishing is and how it works, I believe the main problem facing open access journals is that while it continues to grow and be recognized, it may be viewed differently because it does not produce a hard copy printed version. This problem is more significant for open access journals in the humanities than for those in the hard sciences. I would argue that their success in effectively becoming main stream is due to open access science journals continue to be published to a restricted audience (Mitchell, 2008).

The nature of the journal article appears to be evolving and the concept of the journal will be changing. Electronic publications require the original conception of a volume as a separately bound collection of issues. Some electronic journals have chosen to retain this concept in order to appear compatible with the traditional old style. In electronic only contexts the original constraints of printing and distribution that gave rise to the concept of an Issue are no longer significant. The page-count-per-issue constraints is no longer relevant and the publication delays that used to arise are no longer necessary (Clarke & Kingsley, 2008).

Economics of Education

I argue that the economics of education is a struggle that needs to be addressed in relation to knowledge production and ownership. the emergence of an economics of information, in which information is treated simultaneously as an object of consumption, productive element, commercial signal, and much more. This opens up a potentially new generation of scholars because the gap in the differences that existed between the economics of ideas and the economics of things is slowly going away (Romello & Silva, 2006).

Intellectual property rights reform has been underway since the 1990s and actively pursued by most developing countries after the World Trade Organization's (WTO) Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) came into effect in 1995.

Under the terms of TRIPS, current and future members of WTO must adopt and enforce strong non-discriminatory minimum standards of intellectual property protection in each of the areas commonly associated with intellectual property rights which includes patents, copyrights, trademarks, and trade secrets (Adams, 2010).

Christopher May suggests to continue or even expand control over information through commoditization and digital rights management has hindered openness. Intellectual Property is never going away, but a social balance is being constructed between property and openness. These ideas include a range of political positions about how society should value and exchange knowledge and information (2008). Beyond strengthening of intellectual property rights and the TRIPS Agreement are the first multilateral trade agreement which aims at achieve coordination in business as it seeks to establish deep integration of domestic regulatory policies among nations. Intellectual property rights have become part of the infrastructure which supports investing in research and development which of course is

essential to innovation. The creating effective intellectual property rights have created an incentive for new knowledge creation and its dissemination (Adams, 2010). A country that enhances its intellectual property rights attracts additional knowledge products, which would otherwise be unavailable and where international technology transfer is likely to occur (Lippoldt, 2006). Developing nations are likely to benefit from the reform of their intellectual property systems (Adams, 2010).

The internet can be challenging on the structure of a fragile society. It can have both useful and dangerous effects. This has been recognized by the World Trade Organization (WTO) in the development of the General Agreement on Trade in Services (GATS). The WTO notes that the internet is making important contributions to recent changes in higher education. Research has shown to emphasize the emergence of innovative institutional arrangements between public and private institutions and within and across national boundaries (Farrington, 2001).

The WTO is interested in liberalizing trade in educational services. This is potentially a big money maker for companies and institutions in the USA. American companies and institutions see the potential markets and technical training and skills upgrading. Some countries limit the acknowledgment of private institutions and the movement of non-EU individuals to be employed in higher education. It may be argued that EU countries should take a stance similar to the US in relation, which will be dominated by the US (Farrington, 2001).

Economic, political, and social forces largely shape intellectual property policies and practices at colleges and universities. Although each concept plays a role in shaping colleges and universities' policies and practices to intellectual property, collectively, these concepts

represent a larger environmental that affects the legal parameters, technological advancements, and competing interests that shape the policies and practices surrounding treatment of creations and discoveries in higher education (ASHE, 2008).

Intellectual property rights, in the information age, address what is understood as the public good problem. The cost of creation is high, but the cost of reproduction is low. Once a work is created it may be easily reproduced without depleting the original creation and intellectual property protection is necessary to ensure that the creator has an economic incentive to create works will benefit the public (Litman, 1990). Technology makes creations expensive, but the reproduction easy and at a lower cost. The legal history of intellectual properties in the United States has been one of access and use which is also composed of incentives and rewards (ASHE, 2008).

Intellectual goods that are unprotected by intellectual property may still be protected directly or indirectly by other legal or extralegal mechanisms. If these alternative instruments can substantially replace the appropriation capacities provided by intellectual property rights, then legal changes that constrain those rights and thereby seemingly expand the public domain have no substantial effect (Barnett, 2009).

Theoretical Concept

Globalization, advances in information technology, and increasing internet usage are creating developments in property rights issues that need to be addressed not only by researchers, but also managers and public policy makers. The countless programmers that make up the open source communities built the Linux operating system, which is free. These examples raise questions related to the level of definition of property rights over knowledge-

based resources, which can range from specific technical, functional, and creative skills to secondary resources created (Costello & Costello, 2005).

Whether or not resources remain free depends on the costs versus the benefits defined in property rights. Many knowledge-based resources are subject to positive network externalities. Resources become more valuable to users as the usage increases. This increase in value stems from benefits, ease of communication between parties using the product, and standardization. There may be costs of reduced investment if property rights are defined too well in many knowledge based resources (Costello & Costello, 2005). Many regard the growing access to intellectual property to be part of the democratization of leisure and the progress of civil society. By expanding access through transferring intellectual property to the internet, the participation by individuals who have been excluded or restricted is increased. The production and consumption of intellectual property involves an exchange relationship measured in monetary terms. This relationship is changed by deregulation and the use of P2P technology. In the context of globalization, P2P sharing permits those sections of the world's population who are disadvantaged access to economic resources with which to enrich their leisure experience and widen participation in global consumer culture (Rojek, 2005).

The creative commons approach is about balancing the copyright system in order to maintain protection and to allow the greater distribution of ideas. The goal is to achieve a balance between the different degrees of control of knowledge and information. This concept contends that this can lead to greater creativity and innovation. Rather than the existing system where the attempts for control through divided up proprietary rights is the norm. The commons system operates by way of a license system, based on copyright, which the creator

of the work uses to attach to the work. All of the commons licenses allow file sharing provided it is not for monetary gain, if this is the case then the license must be one which does not have a non-commercial use. This system of the creative commons allows for increased access to material and allows creativity to flourish. The commercial use can be made of the work and so the financial incentives are also prevalent as the commercial use potential within the work can be reflected in the amount claimed by the creator for distributing the work to the person who seeks to have possession of it (Geach, 2009).

The success of a commons approach is dependent on whether the potential for commercial incentives can persuade industry and the government. Allowing the widespread distribution of content without controls provides a greater market which can be generated for the content through awareness and interest. When producing new content, the producer can use the work of others as inspiration which helps reduce production costs. This course of action, or Wikinomics, as it has been termed, is gaining acceptance as a method of adding economic value to a business (Geach, 2009).

An important lesson for economic developing economies is that copyright protection can have both positive and negative effects on creativity. Copyright policies must be structured so that creators have sufficient protection against copyright infringement. Economic development protection must also rest on ongoing creativity, so that copyright protection must not be too tough as to protect copy right owners from competition. Copyright protection and enforcement require granting of permission to access works and the payment of licensing fees and royalties. This usually raises the prices of copyrighted works by increasing the cost of the provision. The technological development of developing countries will be hampered if access to the knowledge base of society is more costly (Park, 2010).

The copyright system enables a variety of creative works than otherwise be available without copyright laws. The increased flow of new knowledge could offset the higher cost of accessing existing knowledge. The technological development in developing nations will be hindered if access to the knowledge base of society is more expensive. The increased flow of new knowledge can offset higher education costs of accessing existing knowledge. The protection of copyrighted works serves not only the interests of copyright owners in industrialized countries, but also those in developing nations. The cost of copyright protection is likely to be higher in developing nations and the levels of income and wealth are lower, therefore royalties and licensing expenditures are problematic to creators in developing countries (Park, 2010).

Intellectual Property

Although relationships between university and industry are not a new phenomenon, the context which characterized the 1980s and early 1990s favored their institutionalization. This institutionalization was characterized by the creation of technology transfer offices the review of university missions and the standardization of contracts, patent support, and developing public relations plans. There is a vast literature on university and industry relationships. Studies have shown that universities are interested in partnerships with industry because of lack of public funds. Before the long standing trend in reducing funds, universities had established partnerships with the private sector. This is the case, in particular, of Land Grant universities in the United States and of certain private universities such as MIT and Stanford (Crespo & Dridi, 2007).

Rhoades and Slaughter (2004) argue that we are witnessing a shift in learning regimes. They provide evidence that knowledge and learning in Academia which were

considered largely as a public good, have become much more functional and commercially focused. They also call this new regime the “academic capitalist knowledge/learning regime.” The authors note that the two regimes can coexist in universities. In this new regime, academic managers, professors, and other professionals become actors who initiate academic capitalism and are not simply absorbed by market pressures or “just players being ‘corporatized’” (Rhoades & Slaughter, 2004, p. 12).

In the global economy, there is no internationally accepted, uniform standard of protection for IP; in spite of regional compacts and international agreements. There are still major differences in the nature of protection policies, and the enforcement from nation to nation. Sometimes these differences become major international disagreements. For example, in the summer of 1996, the United States and China threatened trade sanctions against each other. The point at issue was the United States' claim that China had failed to live up to a prior agreement to police counterfeiting of products protected by U.S. copyrights which was denied by the Chinese (Wei, 1996).

IP laws among nations should not be construed as similarity of actual IP protection. Mutual agreements do not imply a mutual understanding of either the origin or ownership of intellectual property. Marketers must be concerned with not only the laws protecting IP, but the meaning of IP within different. Treaties are negotiable; cultures are not (Foster 1992). Intellectual property is an intangible property. The protection of IP is the protection of ideas, but ideas are unlike other property because when the creator gives away the idea to someone else each can benefit. With the lack of restraints, the second party can pass the idea to others. To be effective, IP protection must allow for purchasers to obtain the benefit of the idea

through its use, while the IP owner retains the power to prohibit that buyer, and all other parties, from copying or otherwise exploiting the idea (Mittelstaedt & Mittelstaedt, 1997).

Intellectual property has emerged as a major issue in the past few years, both inside and outside the university. The debate surrounding intellectual property revolves around issues related to academic identity and to whether university and industry relationships are threatened. The debates become intensified with the intensification of these relationships. To deal with this threat, universities have created technology transfer offices to regulate intellectual property. All private-sector contracts with university researchers have to go through these offices (Crespo & Dridi, 2007).

The increase of university and industry relationships requires expertise related to patent protection. To obtain a patent, the creation must not have been previously disclosed by the author or by other individuals. Most nations have a newness policy in which a patent is granted only if the invention has not been publicly known anywhere in the world. In the United States, confidential disclosure to a technology transfer office is important because it is the moment when a discovery is confidentially disclosed and not the moment of patent demanding that counts for protecting intellectual property (Crespo & Dridi, 2007).

Intellectual property has become essential to higher education because of economic, political, and social forces making knowledge and research serve as central commodities in the information age. Since ideas and expressions translate into commodities, the environmental pressure over the treatment of intellectual property at colleges and universities has changed (ASHE, 2008). Intellectual property is essential to economies based on information or knowledge (Hettinger, 1989). In the information age, ideas and expressions become commodities, and universities must contend with the legal parameters, the various

competing interests associated with the intellectual commodities, and the technological advancements that rapidly alter the policies and practices surrounding treatment of these intangible creations and discoveries. Today the economic health of nations and corporations is determined largely by their ability to develop, commercialize, and exploit scientific and technological innovations. Intellectual property rights are the legal means by which one can protect one's investment in innovation (Wallerstein, Moge, & Schoen, 1993).

As organizations use knowledge as the catalyst to increase the values of their products and services, they seek to capture such knowledge for their exclusive control. Knowledge is now property. Once knowledge is deemed property, intellectual property laws become central to the economy. Intellectual property is the legal form and way of the information age (Boyle, 1997).

The complexities of dealing with intellectual property in the information age have become more pressing in higher education. The shift from an industrial to an information economy, higher education operates in a new context, one in which colleges and universities regularly deal with many legal questions about the nature and scope of intellectual property. If we understand intellectual property as primarily a distributive instrument, then intellectual property may matter as an incentive instrument that operates primarily and indirectly at the "macro" level. If intellectual property supports the economic structures that exhibit weak appropriation capacities, then it may facilitate certain kinds of innovation to which structures are commonly thought to be well-suited. While further inquiry is certainly required, it can be conservatively stated that there is limited, but meaningful evidence that small organizations exhibit unique and innovative abilities in the innovation cycle (Barnett, 2009).

Chapter 3

Research Design & Methodology

Conceptual Framework

The methodological framework used in this dissertation is qualitative research. Of this form, two types of research were used: Interpretative & Case Study. The Interpretative research method was used to examine globalization in the knowledge economy, openness in higher education, and the economics of open education. The second form of research used was Collective Case Study. This conceptual approach was used to combine the theoretical interpretations and combine them with Case Studies to develop meaning and infer results.

Qualitative Research

Qualitative research is a general term that denotes to collections of methods and ways of gathering and examining data that are distinctly different from quantitative methods because they lack quantification and statistical analysis. Qualitative methods are ideal for exploring issues where little is known, making sense of complex situations, gaining new understandings into phenomena, construct themes to explain phenomena, and develop a deep understanding of the phenomena (Morse & Richards, 2002). Data collection is started in a natural environment and the richness of the data collected becomes more valuable instead of using large samples. Data investigation is an inductive procedure with clear purposes of describing and inferring the features connected with the phenomena being studied. Qualitative research incorporates a range of methods with different ontological and epistemological underpinnings, perspectives, and purpose (Smith, Bekker, & Cheater, 2011).

Interpretive Research

Having explained the interpretive research approach, it is necessary to mention the distinctions between qualitative research and an interpretive approach. They are not, by all means, equivalent and interchangeable terms (Klein & Myers, 1999; Neuman, 1997). Interpretive research assumes “that our knowledge of reality is gained only through social constructions such as language, consciousness, shared meanings, documents, tools, and other artifacts” (Klein & Myers, p. 69). Researchers’ values are at the core behind their theoretical viewpoints, which is done in this form of research using globalization and open learning systems philosophies and theories. Guba and Lincoln (1994) mention the need for researchers to make clear both the researcher’s ontological and epistemological expectations before starting any research project. Answering the ontological question, “What is the form and nature of reality and, therefore, what is there that can be known about it” (Guba & Lincoln, p. 108) is the first step in the definition of how researchers can approach a research problem (Andrade, 2009). As is the case for this dissertation, the research conducted in analyzing the theoretical perspectives as well as the practical use of OLS in dealing with Intellectual Property issues.

The interpretive researcher’s ontological assumption is constructed in the social reality is local (Guba & Lincoln) “by humans through their action and interaction” (Orlikowski & Baroudi, 1991, p. 14). Neuman (1997) affirms that “social reality is based on people’s definition of it” (p. 69). Interpretive researchers see the world in a specific time and context. Consequently, the epistemological question, “What is the nature of the relationship between the knower or would-be knower and what can be known” (Guba & Lincoln, 1994, p. 108) must be answered in a consistent way with the ontological view. An interpretive

approach provides a deep insight into “the complex world of lived experience from the point of view of those who live it” (Schwandt, 1994, p. 118). Interpretive research accepts that reality is socially created and the researcher develops the vehicle by which this reality is discovered. This method is reliable with the construction of the social world characterized by interaction between the researcher and the participants (Mingers, 2001). The researcher’s interpretations play a key role in this kind of study bringing “such subjectivity to the fore, backed with quality arguments rather than statistical exactness” (Garcia & Quek, 1997, p. 459).

The interpretive researcher’s epistemological assumption is that “findings are literally created as the investigation proceeds” (Guba & Lincoln, p. 111). Moreover, they explicitly recognize that “understanding social reality requires understanding how practices and meanings are formed and informed by the language and tacit norms shared by humans working towards some shared goal” (Orlikowski & Baroudi, 1991, p. 14). Taking into consideration the previously explained philosophical assumptions, I identify myself as an interpretive researcher (Andrade, 2009).

Case Study

The case study approach is a research approach which concentrates on understanding the present dynamics in a single environment. Case studies can involve either single or multiple cases, and numerous levels of analysis, and can employ a design that has multiple levels of analysis within a single study. Case studies combine data collection methods such as archives, interviews, questionnaires, and observations. The evidence and or data may be qualitative, quantitative, and case studies can be used to accomplish various aims, which is to provide a description, test theories, or to generate new theories (Eisenhardt, 1989).

Building theory from case studies is a research approach that involves using one or more cases to create theoretical ideas, proposals and empirical evidence. Case studies are rich, empirical descriptions of specific cases of a phenomenon that are characteristically based on a variety of data (Yin, 1994). This concept is to use cases as the foundation from which to develop theory. The theory emerges and is constructed by identifying configurations of the associations between the structures in cases and the logical developments. A key component to theory construction from case studies is the ability to replicate itself. Each case serves as a separate experiment that stands on its own analysis. Multiple cases are distinct investigations that serve as replications, contrasts, and extensions to theory (Eisenhardt & Graebner, 2007).

Case studies stress phenomena in a modern context. The process of building theory becomes cyclical in the midst of the case data collection. Theory building from cases is surprisingly is objective because its close adherence to the data keeps researchers honest. The data provides the analytical modeling used (Eisenhardt & Graebner, 2007). A characteristic of case study research allows for researchers to focus on complex situations while being able to take into context the situation (Keen & Packwood, 1995). In the collective case study, the emphasis is on examining a number of cases with the goal of understanding a phenomenon or a population (Stake, 2000). Multiple cases allow for comparison, particularly in diverse settings (Darke et al 1998, Stake, 1995). Stake offers a cautious approach that the number of cases is important. According to Stake, benefits may be limited if there are fewer than four cases or more than ten to 15 because the researcher could be overwhelmed by the data (Stake, 2006). Selecting individual cases must be done in a way as to maximize what can be learned (Tellis, 1997). The case is significant because it belongs to a assortment of cases

which share a common characteristic or phenomenon in multiple case study research approach (Casey & Houghton, 2010).

In collective or multiple case studies, a number of cases are carefully selected. This provides the benefits of allowing comparisons to be made across several cases. Choosing an individual case may permit the discoveries to be comprehensive to theory or to test theory by replicating the findings. Before making comparisons across collective case studies, it is essential to analyze data relating to the individual components cases first. Consideration needs to be attended to in the variations in case study where it is relevant in analyzing the connection among different causes, effects, and outcomes. Case study results can have inferences for theory development and theory testing. The researcher could establish, strengthen or weaken historical explanations of a case and allow theoretical generalization beyond the particular cases studied. The case study method allows for critical events, interventions, policy developments, and program based service reforms to be considered in a detailed modern context (Crowe et al., 2011).

Problem and Purposes Overview

The problem is that open source/access models are struggling against the neoliberal concept of privatization and monopolization. The purpose of the study is to explore the theoretical concepts of globalization and knowledge economy in higher education as well as examine the characteristics of MIT, Harvard University, and Princeton University's open access policies and how they are created, implemented.

Research Questions

The research questions that I am posing are the following: 1) What is the role Globalization plays in the Knowledge Economy? 2) How does Openness and Open

Education impact Higher Education? 3) How does Intellectual Property play a role in higher education?

Population and Sample

The population and sample used in the research study is comprised of three institutions of higher education: Massachusetts Institute of Technology (MIT), Harvard University, and Princeton University. The sample information will be constructed from the information gathered in researching the three institution's policies on open access and how their policies are created and implemented.

Chapter 4

Analysis

Introduction

The struggle of ownership of IP has and will continue to be a problem in providing the necessary resources and information needed for administrators, faculty, and students. Whether by choice or necessity, colleges and universities are in competition with each other for the growing web-based course market. Urged by the rise of the for-profits institutions, traditional institutions have motives to own and control faculty produced digital intellectual property (Talab, 2007). Online education is becoming a prevalent choice for continuing professional education, mid-career degree programs, and lifelong learning. As non-traditional students are increasingly becoming a large portion of the student population at the post-secondary level, campus-based programs, residential, and flattening leveling of enrollment. Colleges and universities view distance education as a way of sustaining growth. Distance education is more important than the enrollment figures may suggest (Moller, Foshay, & Huett, 2008).

Web-based courses and distance learning courseware require more technical support, faculty operation, and campus resources. Consequently, universities are forced to become owners of the software they are using. Technology has served education well and because of its success, it has increased the ability for numerous individuals to better themselves. Traditional colleges and universities have begun to form partnerships for teaching, research. Enrollment opportunities have risen by forming partnerships in distance-learning programs. Because of these developed partnerships, tuition fees structures are being eliminated. Using substantial resources in higher education with intellectual property policies have developed

distance courses, which makes the institutions owners of distance education courseware (Talab, 2007).

Research Questions

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MIT

In 1999, former MIT Provost Robert A. Brown asked a faculty committee to provide strategic guidance on how MIT should position itself in the distance environment. In 2001, the Massachusetts Institute of Technology (MIT) announced the Open Course Ware project. MIT Open Course Ware (OCW) is a large-scale, Web-based publication of the educational materials from almost all of the MIT faculty's courses. This enterprise permits the open sharing of MIT teaching materials with educators, enrolled students, and self-learners around the world. OCW provides open access to the core academic content such as syllabi, lecture notes, course calendars, problem sets/solutions, exams, reading lists, and video lectures from MIT courses, which represents many academic disciplines as well as all five of MIT's schools (MIT, 2011a).

In 2002, MIT Open Courseware published 1,259 of MIT's approximately 1,800 courses to date. In addition, OCW has published 133 updated versions of previously published courses. MIT Open Courseware expects to have published 1,800 courses by 2008, and beyond that milestone will continue to update courses as an ongoing activity of the Institute. As of 2010, the enterprise includes materials from more than 2,000 courses, which

presents almost the entire curriculum of the Institute. Educators from around the globe are encouraged to utilize the materials for curriculum development and students may use the materials for self-study. Course materials contained on the OCW may be freely used, copied, distributed, translated, and modified by anyone, anywhere in the world for non-commercial purposes. Open Course Ware materials have been visited by more than 71 million individuals to date. Visitors have come to the site from more than 215 countries, territories, and city-states around the globe including members of the United Nations and materials have been translated into at least ten different languages (MIT, 2011a).

The courseware teaches information with content and structure. It can be interesting for individuals and teachers who are willing to learn about a topic. There is the ability for individuals to explore how others teach specific subjects or to be able to integrate the course material into their own teaching practices. Depending on their background, students and teachers have the ability to transform information from course material into useful knowledge. The shared context by students who use the course material is smaller and is more fragmented than the shared context for open source software. An area that is lacking is the interaction with experienced human instructors. This is essential in order to create a shared knowledge environment (Baldi, Heier, & Mehler-Bicher, 2003).

The intellectual property policies created for MIT Open Courseware are clear and consistent with other policies for scholarly materials used in education. The MIT faculty retains ownership of most materials prepared for MIT Open Courseware. MIT retains ownership only when significant use has been made of the Institute's resources. If student course work is placed on the MIT Open Courseware site, then the copyright on the work created is retained by the student. The MIT Open Courseware group reviews all the materials

extensively to determine the correct ownership of the material and to determine the appropriate licenses to make the material openly available on the internet prior to making any course materials available. At any point, MIT determines that the rights of others are infringed, they will immediately remove the material until it has been corrected (MIT, 2011b).

The underlying premise and purpose of MIT Open Courseware is to make course materials used in MIT courses freely and openly available to others for non-commercial educational purposes. Through MIT Open Courseware, MIT grants the right to anyone to use the materials. There is no restriction on how a user can modify the materials for he or she owns purpose. Materials can be changed and even combined with someone else's materials (MIT, 2011b).

There are three requirements that an MIT Open Courseware user must meet to use the materials:

- “1) Non-commercial: Use of MIT Open Courseware materials are open to all except for profit-making entities who charge a fee for access to educational materials.
- 2) Attribution: Any and all use or reuse of the material, including use of derivative works (new materials that incorporate or draw on the original materials), must be attributed to MIT and, if a faculty member's name is associated with the material, to that person as well.
- 3) Share alike (aka "copyleft"): Any publication or distribution of original or derivative works, including production of electronic or printed class materials or placement of materials on a Web site, must offer the works freely and openly to

others under the same terms that MIT Open Courseware first made the works available to the user” (MIT, 2011, p.1b).

Non-commercial use means that users may not sell, profit from, or commercialize Open Courseware materials. MIT determined that there are certain areas in interpreting the non-commercial provision of OCW’s Creative Commons license (MIT, 2011b). There are additional requirements in MIT’s license agreement. The commercialization of the product is prohibited. Users may not directly sell or profit from OCW materials or from works created from OCW materials. A commercial education organization or training business may not offer courses based on OCW materials as long as students pay for those courses and businesses make profits. The determination of commercial vs. non-commercial is based upon the use of the material, not necessarily, the user. Materials may be used by individuals, institutions, governments, corporations, or other businesses whether for-profit or nonprofit just as long as the use of the materials or that it is intended to generate sales or profit. A corporation may use MIT Open Courseware materials for internal professional development and for training purposes (2011b).

Supplementary charges to recover reasonable reproduction costs may be permitted. Recovery of nominal actual costs for copying small amounts of MIT Open Courseware content on paper or CDs is allowed for educational purposes as long as there is no profit and it is intended to be in compliance with all license agreements. Students must be informed that the materials are freely available on the MIT Open Courseware site and that their purchase of copied materials is optional. A professor may recover the costs of creating the CDs if he or she offers to create CDs of MIT Open Courseware materials relevant to the course work at an

institution in a remote area and has limited internet access and has limited network infrastructure on their respective campus (MIT, 2011b).

Harvard

In Harvard's Open Access Policy give faculty authors in participating schools grants the university a nonexclusive, irreversible rights to distribute the scholarly articles for non-commercial use. Scholarly articles provided to the university are stored, preserved, and made freely accessible in digital form in Harvard University Library's open access library. The repository has the help of Harvard to ensure its availability and functionality. Using terms from the Budapest Open Access Initiative, faculty's scholarly articles are articles that demonstrated their success (Harvard, 2011).

Many of the written products by the faculty members are not included under the concept of what it means to be a scholarly article. For example, books, popular articles, commissioned articles, fiction, poetry, encyclopedia entries, ephemeral writings, lecture notes, lecture videos, and other copyrighted works make up the list. Without insulting the works produced, it is a way of separating publishing or distribution mechanisms that function in different ways. By making a general policy, individual faculty members can benefit from their membership in the policy-making group. The University can work with publishers on behalf of the faculty to simplify procedures and broaden access to their works. With support from OSC, open-access policies are now in place at: Harvard Faculty of Arts and Sciences, Harvard Graduate School of Design, Harvard Graduate School of Education, Harvard Business School, Harvard Law School, Harvard Kennedy School of Government, Harvard Divinity School (Harvard, 2011).

The Open-Access Policy allows faculty members to make their writings openly accessible, and it enables the University to help them. The University has set up an open-access repository called Digital Access to Scholarship at Harvard (DASH) to make available the scholarly articles provided by its faculty members. Through the transferability provision, Harvard may further allow others to distribute content in DASH, provided that the articles are not sold for profit. Faculty at other institutions could be given permission to make copies for free distribution directly to their students. The Open Access Policy grants Harvard the right to license articles for free use in a course packs just as long as the course packs are not sold for profit. Those who wish to include articles in a course pack he or she could continue to get permissions from the publisher by paying royalties to the publisher (Harvard, 2011).

The license allows Harvard to permit the articles to be collected and indexed by internet search engines, such as Google Scholar, so that the articles can more accessible and used to provide services that does not sell the articles for a profit. Harvard also authorizes the use of the articles in a commercial service which provides information extracted from the articles, for example bibliographic data or citation lists. The license is directed to give Harvard the flexibility to use those means to advance the purposes of the policy, as long as the articles are not sold for a profit. Harvard does not have and cannot grant to others the right to sell the articles for a profit or to sell a course pack or book containing the articles for a profit (Harvard, 2011).

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advance notice. The use of the webpage or any of its content licensed, after any changes have been made will constitute the agreement on a prospective basis to the modified terms of use (DASH, 2010).

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The user may not use a likeness of the published version of an article under these open access terms, unless the publisher permits and that the version has been made available as an article on the website. The user may not translate the published work or derive the work of an article, except that, as reasonably necessary in order to carry out a permitted use. The

user may include the article in a collection or database, may change the technical format of the article, and may use excerpts of the article for teaching or other permitted purposes, so long as, in each case the user of the article or any portion thereof continues to comply with all provisions that are applicable to articles (DASH, 2010).

The user may not sublicense or otherwise transfer the rights in any article, and will only make articles available to others for use by them. Other posted materials other than articles are made available on the website at the direction by the authors in accords with their understanding of their rights in that material. The user may download and use other posted materials in any manner not forbidden by copyright or other appropriate laws. Harvard does not grant the user the rights in other posted materials, authors in some cases may allow additional uses material (DASH, 2010).

Nothing in the terms of use is intended to restrict or limit the users from using the material that without any rights granted, would not violate anyone's copyright control, trademark and or other property rights. Content on the website other than the designated material is made available only for personal use. The user may not retransmit, publish, distribute, display or otherwise make available to others, except Harvard allow. This exception for the notices and other information accompanying posted materials, which the user may make available when the he or she has the permission to make the material available (DASH, 2010).

Princeton

In 2010 the Dean of the Faculty appointed a faculty committee, comprising of professors from all the divisions of the University, to examine the question of open access to faculty publications. The committee met several times in 2011 and agreed to accept this

policy. Most faculties' scholarly production is in the form of published articles in refereed journals and conferences. Faculty members publish scholarly articles without expectation of monetary return. Some journals restrict access by having subscriptions and other restrictive practices. An open-access policy is intended to make the faculty's scholarly articles, published in journals, and conference proceedings which are made available to the public than can afford to pay for journal subscriptions. The open-access policy permits the University to run an open-access repository where the faculty can conveniently make those articles available (Princeton, 2011).

The faculty studied some of these policies before coming to agreement on the policy. The faculty committee recommend a revision to the rules and procedures for the faculty that will give the University a nonexclusive right to make available copies of scholarly articles written by the faculty, unless a professor specifically requests a waiver for particular articles. The University grants permission to the faculty to post copies of their articles on their own websites or on University websites. The faculty already had exclusive rights in the scholarly articles and the main effect of this new policy is to prevent them from giving away all the rights when they publish in a journal (Princeton, 2011).

It makes sense to adopt a policy even if the University does not have an open access repository of its own, the University and its faculty benefit the most from this policy if it does establish such a repository. The University already operates a public data archive that could be adapted for this purpose and recognizes that there are many issues of when implementing and resources to be considered (Princeton, 2011).

The Faculty Committee endorses the following changes to the rules and procedures by the Faculty. The members of the Faculty of Princeton University desired to make their

publications openly accessible to the public. Each faculty member granted to The Trustees of Princeton University are nonexclusive, irrevocable, worldwide license to exercise any and all copyrights in his or her scholarly articles published, whether now or later invented, as long as the articles are not sold by the University for a profit and authorizes others to do the same. This permission applies to all scholarly articles that any person authors or co-authors while appointed as a faculty member, except for any such articles authored or co-authored before the adoption of this policy or subject to a conflicting agreement formed before the adoption of this policy. Upon the express direction of a faculty member, the Provost or the Provost's designate will waive or suspend application of this license for a particular article authored or co-authored by that Faculty member (Princeton, 2011).

Princeton University grants permission to faculty member to exercise any and all copyrights to his or her scholarly articles that are subject to the terms and conditions. This authorization is irrevocable, non-assignable, and may be amended by written agreement in the interest of further protecting and promoting the spirit of open access. An open-access policy without a ready means for faculty to post their scholarly articles and an equally ready means of retrieval would be of very limited. In some fields the expedient methods of posting and retrieval of article are already in place (Princeton, 2011).

This is not generally true of the humanities and social sciences. The faculty committee recommended the creation of a University repository, which already exists at peer institutions. The repository would also be available to provide links to the other retrieval systems to use in other fields. In providing the goal of open access, the repository will also offer a range of scholarship in the University. Without suggesting precisely how the repository should be established or what resources should go into it and for the maintenance.

The faculty committee does recommend an infrastructure to instruct faculty on how to post their work and use of the repository (Princeton, 2011).

The faculty committee used these principles in their decision making process: 1) It is consistent with the fundamentals of scholarship; 2) The university supports open access is consistent with other forms of scholarship; 3) The faculty are the agents of open access; 4) University support for open access is a form the university's research mission; 5) The policy should recognize and respect the diversity of disciplines, organizations, and academic publishing. Implementing a university wide open access policy requires continued outreach to departments and faculty. The policy requires the University and faculty to retain some of the rights. As the journals publish articles, faculty members have the right to post a copy on his or her own web site or the university's (Princeton, 2011).

Summary

MIT Open Courseware teaches knowledge in both content and structure. The intellectual property policies created for MIT Open Courseware are clear and consistent with other policies for scholarly materials used in education. The Faculty retains ownership of most materials prepared for MIT Open Courseware, following the MIT policy on textbook authorship. MIT retains ownership only when significant use has been made of the Institute's resources. If student course work is placed on the MIT Open Courseware site, then copyright in the work remains with the student. Prior to making any course materials publicly available, the MIT Open Courseware team has reviewed all material extensively to determine the correct ownership of the material and obtain the appropriate licenses to make the material openly available on the Web.

In Harvard's Open Access Policy, grants the university a nonexclusive, irrevocable right to distribute their scholarly articles for any non-commercial purpose. Scholarly articles provided to the university are stored, preserved, and made freely accessible in digital form in DASH, Harvard University Library's open access repository. Many of the written products of faculty effort are not encompassed under this notion of scholarly article: books, popular articles, commissioned articles, fiction and poetry, encyclopedia entries, ephemeral writings, lecture notes, lecture videos, or other copyrighted works. The works are generated as part of separate publishing or distribution mechanisms that function in different ways and whose shortcomings, if any, the present policies do not and are not meant to address. The University can work with publishers on behalf of the faculty to simplify procedures and broaden access.

The Open-Access Policy allows faculty authors to make their writings openly accessible, and it enables the University to help them do so. The University has set up an open-access repository called DASH to make available the scholarly articles provided by its faculty members. Through the transferability provision, Harvard may further allow others to distribute content in DASH, provided that the articles are not sold for profit. For instance, faculty at other institutions could be given permission to make copies for free distribution directly to their students. The Open Access Policy grants Harvard the right to license articles for free use in a course pack, so long as the course pack is not sold for profit. Alternatively, those seeking to include articles in a course pack could continue to get permissions from the publisher, typically by paying royalties to the publisher.

Princeton University gave permission for their faculty to post copies of their articles on their own web sites or on University web sites, or in other free areas. The faculty already had exclusive rights in the scholarly articles they write; the main effect of this new policy is

to prevent them from giving away all their rights when they publish in a journal. Although it makes sense to adopt such a policy even if the University does not establish an open-access repository of its own, the University and its faculty will benefit most from this policy if it does establish such a repository.

The Princeton concept is consistent with the fundamental purposes of scholarship and supports the decision for open access is consistent with other forms of university support for scholarship. The primary agents of open access are the faculty and Princeton's support for open access is a form of service to the faculty intended to expand the beneficiaries of the university's research mission. The policy recognized and respected the diversity of the many disciplines, professional organizations and academic publishing maintaining communication, flexibility and diversity as core principles of implementation.

Chapter 5

Findings, Conclusions, Implications, & Recommendations

Introduction

The ability for institutions to develop and implement open access policies are growing and providing valuable resources for educators and learners. MIT, Harvard, and Princeton provide a solid case study to evaluate and investigate the concepts of open source/access and IP ownership. In this chapter, there will be a summary of the study, findings, conclusions, implications, and ideas for future research to be conducted.

Summary of the Study

The problem is that open source/access models are struggling against the neoliberal concept of privatization and monopolization. The study explored the theoretical concepts of globalization in the knowledge economy, open learning systems, and intellectual property rights by institutions in higher education. The population of the study constituted Massachusetts Institute of Technology (MIT), Harvard University, and Princeton University's open access policies and intellectual property rights policies.

Findings

MIT

MIT struggles to comprehend how online the educational structure would fit with the Institute's unique character and essential capabilities. Through a series of faculty committees, MIT expressed its values and how it could be transformed into digital education. In proposing the Open Course Ware concept, the faculty committee found a way to join MIT's values of excellent education with the internet's strength of dispersing a wide variety of content. MIT began to openly share the education materials already being created on campus

for classroom based learning, instead of attempting to create expensive new education materials to support the online learning experience, (Carson, 2009).

The educational materials provided the structure for global educators to create better classroom experiences, and to provide students additional resources for understanding concepts. Open Course Ware is also a powerful instrument to support independent learning in a variety of conditions. In proposing Open Course Ware the main tendencies in higher education were to be commercialized. MIT also created a model for the role of universities in the digital environment which resembles the tradition to commitments in academia in the distribution of information and knowledge in a community of scholarship (Carson, 2009).

Harvard

Harvard University followed MIT's acceptance of the concept of openness, but developed a new form of openness. Harvard's creation and implementation of the model of the Open University had its creation with their faculty distributing their scholarly articles to everyone while having the ability to maintain copyright protection. Harvard became the first university in the U.S. to embrace an open access for its faculty. In the creation of the policy, the faculty was concerned because of copyright problems and the maintaining of ownership was essential to faculty members and their fears were that the created policy control and not serve the collective interests. This policy and philosophy was faculty-driven, which became the first to impose the requirements instead of coming from the administration. In keeping with the policy/philosophy, faculty members would have the right to remove themselves from the contract if it became troublesome. The policy requires all faculty members to provide electronic copies of their articles to the Provost's Office (Peek, 2005).

The strength of the policy is that the faculty does not sacrifice anything by sharing the publication rights with Harvard. This policy unites Harvard if as a collective it is decided to reject a journal's request for exclusive publishing rights. Harvard University created a legal memorandum, which reinforces their negotiations with commercial publishing companies. A unique feature of the open access policy is that the policy is not enforced by the faculty senate or the administration. Harvard's Library created a special administrative office which ensures that open access information is accessible to any departments. In doing so, it contributed to Harvard's goal of a unified institutional atmosphere. A regulation in the policy requires that the faculty and the administration review the open access policy to ensure that everyone who is participating is still content (Peek, 2005).

If other institutions decide to follow Harvard's attempt to open access, it will be problematic for publishers in higher education. The open access policy could create negative reactions that could diminish profits. The open access movement requires changes coming to the journal marketplace. Publishers profit from the ownership rights that they protect on behalf of both the authors and themselves. Harvard's open access policy threatens the traditions of business with scholars and publishers. Scholars and researchers have been traditionally willing to sign contracts, which provide all copyrights to the publishers instead of retaining their own respective rights. With the creation of the Open University it forces the scholarly community to break with tradition and require the open sharing of research, software, and data (Van Orsdel & Born, 2008).

Harvard will continue to have the traditional educational environment of transferring scholarly information. This application of openness allows Harvard and other institutions to rethink their approaches to knowledge and information. The concept of distributing

information to a one-to-many process will redesign the scholarly community in higher education (Peters & Besley, 2006; Peters & Roberts, 2010). Harvard's open access to scholarship incorporates the principles of the new technology of openness. The users and distributors of scholarly information promote collaboration and establish new forms of the intellectual distribution. Harvard's open access provides a new educational framework and challenges the concept of what constitutes a university which embraces democratic concepts of the Open University (Peters, 2006).

The content Harvard's courses and degree programs allows for being a self-directed learner can translate into a more serious form of education. Institutions will encourage the emergence of new individuals who will become participants in the creation of open education environments for the new type/form of learner. Harvard's Open Access policy creates a new type of educator. This new form of scholar will be concerned with the content of the information that will serve as a way for learners to be directed to the appropriate forms of information. In this environment, learning communities will desire to utilize the informational resources, which is available through the Open Access policy. These scholars will form new teaching environments and instead of the traditional linear form of sharing information. The nontraditional classroom environment in which the scholar and student work allows individuals to share their own works (Lynch, 2008).

The policy shares many of the limitations of MIT's Open Course Ware, despite the promise of Harvard's Open Access policy. Harvard is evolving into a one-to-many relationship to institutions and individual learners. The education provided by the reading of faculty articles becomes informal and directionless. These factors may be problematic for

some individuals who have concerns pedagogically and educationally as to where it is recognized that the situation in the educational marketplace (Lynch, 2008).

Princeton

Princeton's decision put itself along the same lines as Harvard University and Massachusetts Institute of Technology (MIT), as well as a growing number of other institutions having similar policies encourage and or require researchers to post their published works in institutional repositories. Unpublished drafts, books, and lecture notes are not included in the policy. This grants the university nonexclusive rights to make copies of its faculty's articles available for everyone. Unlike Harvard, which has established a repository and policies to place their works online, Princeton does not yet have a system in place to help faculty members make their work available. The faculty committee recommended the policy encouraged the university to establish an open-access repository. An open-access policy without a ready means for faculty to post their scholarly articles and a means of retrieving would be limited (Howard, 2011).

In all such policies, the university was given a license to the scholarship prior to any copyright transfer or to a publisher. An alternative for the university is to use the power of the license in a more subtle way, which takes into account various publisher policies. In doing so, this makes the open access repositories more labor-intensive and difficult. Especially, as publishers begin to change their policies to control the different ownership rights. How Princeton will actually implement its policy is still an problematic, since there is no repository of their own (Smith, 2011).

This policy was created by faculty ownership and expresses the desire by the faculty, as copyright owners, to manage their rights more social and personal way. The open access

policies now in place several U.S. institutions which have been adopted by the faculty and they have decided to grant a non-exclusive licenses to the university, which they can do because they are the copyright owners. Probably the most important fact about these policies is that they give the author control. Open access policies recognize that authors are the owners of copyright and express want their rights to be managed directly and in a manner that benefits everyone with the scholarship (Smith, 2011).

Conclusions

The knowledge economy in the global economy will be the driving change in utilizing open systems. The resurgence of neo-liberal economic policy, contemporary economic globalization has become a topic of great interest. Globalization is not perfect and is not always the source of prosperity for everyone. Globalization itself is neither good nor bad, as Joseph Stiglitz prompts us to remember. It has benefited those nations that do desire to embrace it on their own terms. Liberalization means the removal of the obstacles to the market, in particular trade barriers and government interference in financial and capital markets.

While there are consequences of excessive free financial and capital markets are acknowledged, the undoing of trade barriers are still very popular (Stiglitz, 2002). I agree with Stiglitz, government policies need to work to reduce the financial volatility of the economy, while maintaining the economy to keep the full employment as possible. This supports the importance placed on the stabilization and places the significance on developing policies that lessen the exposure of the economy to risk and providing the ability to respond (Stiglitz et al., 2006).

The integration of global economic activities is associated with significant changes with innovation. The emerging knowledge based economy rejects the traditional forms to encouraging innovative processes and knowledge creation, which is dominated by technology. The acceptance of innovation within the framework of a knowledge based economy goes far beyond the models used in innovation theory and in regional economics, which typically describes the innovation processes in modern industries (Strambach, 2002).

Humanity and industry are dependent on innovations which make advancements in society. Creative thinking is the result of collective information and knowledge, which results in individuals sharing ideas and knowledge freely to better achieve results. Knowledge that is shared grows and changes because of the inquiring and enhancements through the efforts of its contributors (Nelson, Christopher, & Mims, 2009). The development of the knowledge and learning economies highlights the significance of intellectual capital and tacit knowledge for economic growth. The knowledge economy directs at some phenomena that have to be defined, studied, and expounded. The creative economy is based on many of the same economic arguments and the theoretical knowledge of innovation. Digital information products also undermine traditional economic expectations of competition and transparency. The knowledge economy is about creating intellectual capital instead of accumulating actual physical capital (Peters, Marginson, & Murphy, 2009).

Open learning systems have had a great impact on higher education. Open education implies a removal of problems in order for education to be available to everyone (Egan, 1975). Open education brings its own set of aims, standards, and ambitions that transcend projects or functional technology. Open education, open content, and open source as a collective concept is normally used as a means to freedom, enabling, and democratization.

Equal access to knowledge and an invitation for everyone to participate in the advancement of new ideas are common themes in open education movements (Kahle, 2008). Open universities are inherently innovative and are part of their respective societies.

Open universities can demonstrate the values of nations and can service the development of human their capital. Open universities are more aware of the needs of the society and have the capacity to evolve, unlike the traditional forms of education (Tait, 2008). Open source software is developed by a community of users and distributed for others for free. All applications are openly shared as well as the source code, which allows for anyone to expand upon the existing features (Caudill, 2009). As is the case with MIT, Harvard, and Princeton in their respective plans to have knowledge and information be freely distributed to everyone. It will be an ongoing process of higher institutions to maintain, develop, and create open learning opportunities.

In the expanded opportunities that raise from advances in e-learning technologies it is essential for educational programs to address students' needs. This is extending from traditional programs to where the learning takes place at the learner's convenience. By providing more time and a place of study it can translate into learning occurring anywhere (Bensona & Samarawickrema, 2009). A movement in educational training and professional development occurs in using networked technologies that distribute learning and creating online learning communities. Emerging technologies require institutions and educators to reconsider their views about teaching and learning by using networks, multimedia systems, education, and training, learning is now for everyone and nations around the world. To maintain global competitiveness it is essential for organizations, institutions, and nations to invest in continuing education. The interest in online communities is growing and higher

education institutions are using communities to establish and build lifelong learning for their students and continue to build their education programs (Charalambos et al, 2004).

The use of IT and the internet on campuses is everywhere, and students need to adjust to e-learning practices because faculty members are using a combination of in-class and out-of-classroom in their teaching methods. Faculty operates in both environments and students are expected to use course websites; access course management systems; and provide online presentations. I believe e-learning environments have the potential to facilitate the inclusion of all types of students within classrooms (Fichten et al, 2009).

The economics of education has to address knowledge production and ownership in the open environment. The rise of the internet and its adoption by libraries and businesses around the world has raised several legal problems. This communication offers tremendous capacity for improving society and the lives of citizens and it is common to expect legal problems. It is interesting to observe that a society could be restructured to provide the laws become less important. Society develops laws and the legal system to aide in settling disputes and existing problems in the digital world. Many internet advocates have expressed the view that copyright law should go away in the digital environment because it is obsolete (Gasaway, 1998).

Globalization, advances in IT, and increasing internet usage creates problems in property rights issues that need to be addressed by researchers and by policy makers. Christopher May proposes to remain and expand the control over information through the commoditization and digital rights management has held up the movement to openness. Intellectual Property is never going away, but a balance is being (re)established between property and openness. These issues are not separate ideas, but rather embrace a range of

political positions as to how society should value and exchange knowledge and information (May, 2008).

The creative commons approach is about balancing the copyright structure and maintains protection while allowing a greater distribution of ideas. The examples of MIT, Harvard, and Princeton are trying to accomplish this task and there is a solution to having IP ownership while maintaining openness to the world. The preferred outcome is creating a balance between the different degrees of control of knowledge and information. This can lead to greater creativity and innovation than another system where there is the effort to control through separate proprietary rights. The commons policy functions as a license system, which is based on copyright and where the owner can apply it to their works. All of the commons licenses allow for file sharing as long as it not for monetary gain. If there is a profit, then the license must be one in which it does not have non-commercial use. The creative commons provides for access to material and allows creativity to flourish and commercial uses can still be used of the work. The financial incentives also are dominant as the commercial use potential of the works can be seen by the amounts claimed by the creator in the distribution of the work to the individuals who are seeking to own the work (Geach, 2009).

Implications

The implications for addressing the issues of open access and IP ownership are essential in dealing with the current problem. I think institutions are and will continue to embrace the concepts of openness and the various aspects. What MIT, Harvard, Princeton, and others have created and adopted is the natural progression in openness. They consortium that is involved with open access and managing the IP problem should be applauded for

making great strides. However, there are still problems and limitations in dealing with institutions, faculty, and open access movement.

I believe what is needed is a macro and a micro approach to solving the issues. The first issue in dealing with open access/IP and institutions is the ability of sharing. I think MIT, Harvard, and Princeton have done a great job is blending the lines of ownership and usability. With openness striving for access for all, it still leaves the issue of receiving merit and credit for the publications, software, and other creative ventures constructed by faculty. For faculty and others to continue to strive in the area of openness, departments and academic peers must also be able to be peer reviewed by academic journals and other peer reviewed opportunities.

Since higher education institutions like to pretend they are “nonprofit” organizations and since education is their mission, why not have their knowledge be distributed for free and still carry the weight of the traditional evaluation methods? The faculty merit system of “publish or perish” and author citation counts need to be adjusted to also incorporate the open access milieu and the role it plays in educating others. Just as there are some publications that are held in higher esteem than others for publication, so can the idea of openness and online educational formats can be associated. Institutions can continue to have their own respective webpages full of information, but it also can be peer reviewed in its ability to provide educational information and knowledge. If institution’s true goal is to improve their students to become lifelong learners, then there is not any better environment than having educational materials free for students and citizens. I believe it will be possible with the continuation of more institutions coming on board with small movements of openness and knowledge production pushed from faculty.

The second (macro) approach is continued to be instrumented is a national and global perspective of IP rights and ownership. With the institutions developing open access resources, it is also important for the network of institutions of higher education to continue to collaborate in the area of IP. Having open resources provides institutions from around the world to begin a “world bank of knowledge.” In this scenario, there would be information servers of information free for the world to use. It would break down the international IP trade barriers and allow for open software, educational materials, and knowledge production to occur. It would thus, make education a non-commodity and make it for what it truly is, a process of individual and group development.

In the initial creation, it would be located in geographical regions and then into continental locations. So whether it would be regional information accessed by individuals or accessed by global citizens, the different warehouses of knowledge serve to provide the rich forms of educational materials and opportunities. Institutional webpages would still be linked and organized with faculty distributed knowledge platforms, but also be grouped with others to form a collective body of knowledge and learning opportunities.

I realize that institutions will fight this process, but in the spirit of open access, embracing this opportunity for more distribution of materials will provide institutions and faculty more recognition in the educational opportunities they would provide for their students and citizens of their country, continent, and world.

Future Research

Further research should be conducted with an in-depth case study analysis of one particular institution. Researching the infrastructure and other expenditures needed to develop, maintain, and create open access learning opportunities would of great interest. This

research would be important to give a detailed perspective of what it takes to operate open access policies. The rationale for needing additional research in this area is to be able to learn more of how the institutions handle and work with IP ownership issues with faculty and publications.

Another area of future research opportunity that could be conducted is a case study where interviews of faculty members and administrators would be conducted. This research would be significant because it would get their opinions and perspectives from individuals on open access, IP ownership struggle within higher education. The rationale for conducting this form of research is to provide great insight and information about the personal decisions to want to contribute to open access environment and how administrators deal with their own institution's missions while providing a world resource of information.

A final approach would be the evaluation of the open access webpages and materials to see how they are contributing to the knowledge production of others. This form of research would be conducted in an evaluation of the webpages themselves and the information as to how the specific institution works with open access policies and the institution's educational materials to be used for individuals who attend the respective institution. This study is important because it would provide detailed accounts of what types and forms of information that is provided and to see how the open access program could better serve the learners and to better provide educational materials for everyone.

Summary

The purpose of the study is to examine the struggle between the concepts of openness in higher education and the privatizing of knowledge/information. The transformation of nations into knowledge societies will depend on their ability to provide and sustain

knowledge citizens and knowledge workers. The issue of IP ownership has and will continue to be a problem in the open access environment. In the open learning environment, it becomes a constant struggle for faculty, institutions, and publishers as to the best way to handle the IP ownership problem.

The knowledge economy in the global environment will be the driving change in operating open systems. The increased global integration of economic activities is closely connected with improvement in the innovation. The emerging knowledge based economy is based innovation processes to new forms of knowledge creation. The development of the knowledge and learning economies emphasize the significance of intellectual capital and tacit knowledge in the forms of human, social and intellectual capital for economic growth and development. The knowledge economy directs interest that needs to be described, analyzed and explained. The creative economy is based on many of the same economic arguments, theoretical knowledge, and innovation. Digital information products undermine traditional economics because the knowledge economy creates intellectual capital rather than physical capital.

Open learning systems have a great impact on higher education. Open education removes problems in order to allow for education to everyone. Open education brings with it its own set of goals, values, and aspirations that transcend any specific projects or functional quality of technology. Open education, open content, and open source as an idea which become a way to liberation, empowerment, and democratization. Equal access to current knowledge and asking for everyone to participate in advancement to new ideas are themes of the open education. Open universities are innovative and open universities are more aware of the needs of the society and can change. Open source software is developed by a community

of users and distributed for others to use without any fees. The economics of education need to address knowledge production and ownership of IP in the open environment. The internet, libraries, businesses have raised several legal problems. Globalization, IT, and internet usage are creating developments in property rights issues that need to be addressed by researchers and policy makers.

MIT Open Course Ware concept goals were to share the materials already being created on campus for classroom based learning. These resources provided the building blocks for other educators around the world to create better classroom experiences, and give students additional resources for understanding concepts from their classes. Open Course Ware is a tool to support independent learning in a variety of circumstances. MIT also created a model for the role of universities in the digital environment.

Harvard's creation and implementation of the model of the Open University had its creation with its faculty making their scholarly articles available to everyone while maintaining copyright protection. This Open Access policy and philosophy was faculty driven and became the first to impose the requirement upon itself instead of having the request coming from the administration. A feature of this Open Access policy is that the policy agreement is not coercive from the faculty senate or the administration. The faculty was concerned that there could be copyright problems and the ability to maintain ownership of the information was important and there was concern that that the policy would control and would not serve their collective interests.

Princeton's faculty committee recommended the policy encourage the university to establish an open-access repository. The policies provide a license of the works that is prior to any copyright transfer to a publisher. An alternative for the university is to use the license

to take into account the various publishing policies. These policies were created based upon faculty ownership and express the desire of the faculty as copyright owners, and maintain the ability to manage the rights more in beneficial manner.

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