KNOWLEDGE DISTRIBUTION IN THE DIGITAL WORLD

Creative Commons as Gift and Commodity

By

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Abstract

This study examines knowledge distribution in the digital world through the illustrative example of the Open Educational Resources Movement, a social justice movement fighting the monopoly over knowledge by seeking to attain open access to educational content. This theoretical thesis has two major purposes: (1) to look into the relationship between knowledge as a commodity and knowledge as a gift in the digital world (2) to demonstrate that the dichotomy between commodification and free acquisition of knowledge has been reconciled through the intermediary role of Creative Commons, a non-profit organization committed to the expansion of creative works in the public domain through the adoption of open licensing. The main conclusion of the study is that the corporate space and the community model can co-exist in a relative balance if they are operating within a flexible legal framework that accommodates both the private and the public interest. The OER movement successfully exemplifies the triumph of open access over the process of commoditization.

Key Words:

information society; knowledge distribution; digital world; open access; open educational resources; gift; commodity; Creative Commons

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I dedicate this thesis to my mother, who has always been my role model in life. Her strength will always inspire me to follow my dreams.

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1. Introduction

Looking for an inspiration for the book you are writing, you decide to go to the park where there always are young artists that awaken your creativity. Walking in the beautiful gardens and among exquisite statues, you pass by a man who is playing guitar. He seems so immersed in his music. However, you cannot hear what he is playing. You are surprised. You look around and you see an artist drawing… but you cannot see his painting. You keep walking. There are performers down the alley, but suddenly they stop their dance. The sign next to them reads "the performance was disabled by request"… Something has changed here.

Disappointed you decide to leave and it is then that you notice a bridge. You can see people dancing in the distance, you hear music and laughter. Out of curiosity, you decide to see what it is. Several artists follow you. You go nearer and you are surprised by what you find. It is full of all kinds of people, from different ages. The atmosphere is astounding. One young girl is singing. A boy continues from where the girl stops. Then a guitarist joins, followed by a flutist. A poet strolling around recites a favorite poem that a writer includes in his script for a play. There is an energetic disputation going on among sociologists who have gathered around the statues of ancient Greek gods. A philosopher overhears them and joins the discussion ready to refute their arguments. What amazes you most are the children around, who are playing amidst this intellectual environment, soaking up the spirit of freedom around. "Where am I?"- You ask a child playing with a puzzle constructed of hundreds of different photos. "You are in the Creative Commons"-the child replies.

This is not a fictional story. It is a creative representation of the 21st century digital reality, which has been split in two conflicting realms – a private and a public one. The

communication between the two has been discontinued because of the cumbersome outdated legal framework that was imposed on both realms. In 2002, the Creative Commons (CC) organization was established as the linkage between the two dominions, as the middle ground on which some constructive dialogue could be achieved. It aspired to enable a new type of sharing liberated from legal, technological and cultural hurdles. Since then, Creative Commons has become the bridge to the future, endeavoring to transform our thinking from thinking about content to thinking about communities of shared practice (Creative Commons website). Sharing, of course, is not a new occurrence. It has been an integral part of our communities for hundreds of years. However, in the last decade there were clear signs that sharing in the digital space has failed as a result of the rigid legal framework. The goal that Creative Commons assumed, as indicated from one of their promotional videos, was to save the world from failed sharing (CC website): "What does it mean to be human if we don't have a shared culture?" ask some of the leading proponents of Creative Commons. "And what does a shared culture mean if you can't share it?" The answer to this question is simple but with many important consequences – a shared culture can not exist if we are not allowed to share.

This thesis addresses the dynamics between the two contradictory occurrences in the digital world: one of commodification and one of de-commodification of information. Previous research in the field has concentrated on pointing out the conflict between the two processes and has often disregarded other possibilities, such as them existing as an alternative to each other or parallel to one another. Adopting a dialectical approach (thesis-antithesis-synthesis), this study explores the relationship between knowledge as a commodity and knowledge as a gift. Then, the study offers a reconciliation of the conflict between the two by presenting the case study of Creative Commons, an initiative that claims to synthesize the opposites by bringing them together in a complementary relationship. Throughout the thesis, I

probe into this relationship by addressing the following questions: Is it possible for the corporate space and the community model to co-exist without one overpowering the other? Can the dichotomy between knowledge as a commodity and knowledge as a gift be resolved in the virtual space through such initiatives as the Creative Commons? Is Creative Commons just the next attractive, but delusional idea produced by the field, or does it actually succeeds in finding the balance between the private business and the public interest?

The topic of digital knowledge distribution is usually viewed as constructed by binary oppositions: commodity vs. gift; private vs. public; paid vs. free; corporate vs. social; closed vs. open; enclosure vs. open access; copyright vs. open licensing; all rights reserved vs. no rights reserved. In the last decade, there has been a remarkable surge of such dichotomies fueled by two opposing legal mechanisms – Copyright and open licensing. My aim is to resolve these polarities and to show that they are not mutually exclusive, but rather complementary to one another.

Since the focus of this research is knowledge distribution in the digital world, this thesis cannot leave out the important concept of the digital divide, because it demonstrates that inequality in information technologies drastically reduces the usefulness of such initiatives as open educational resources.The internet's pervasiveness in almost every social, economic, and political area provokes a heated discussion as to what will happen to people who are with no or limited access to internet or to those that are unable to use it efficiently (Castells 2001). Even if an ideal type of a global sharing community is achieved and educational materials flow untroubled across the digital space, the question about digital inequality and lack of access to information will not disappear, but will become ever more relevant. This study also hypothesizes about the transformations that academia will undergo engendered by the presence of the two diverse ways of distributing knowledge. In a separate chapter on open educational resources, I analyze the implications for teaching and learning

and attract attention to the drawbacks that the lack of access to knowledge causes in the digital age.

Because of the multidisciplinary scope of the topic, the thesis addresses a whole range of economic and social issues and draws from diverse theoretical perspectives and academic disciplines. It is an attempt to combine opinion pieces, theoretical approaches and the evaluation information that reports on Creative Commons offer. What makes this research challenging is the ongoing sweeping change in academia that was brought about by the complex interaction among the emerging knowledge society, globalization and the new Information and Communication technologies (ICT).

The theories about the information age and the internet are central to my research since the virtual space is the ground for both processes of commodification and de-commodification. As Krishan Kumar (2004[1995]:103) writes, " the birth of information, not merely as a concept but also as an ideology, is inextricably linked to the development of the computer". Therefore, in the literature review that follows, I position my research questions in the context of the information society and the new Web 2.0, a tool that supports sharing, communication, and social utilization of the World Wide Web.

Unfortunately, the amazing impact of technological invention on education and the scale of collaboration have been seriously curtailed by knowledge being appropriated for the needs of the market and private financial interests. As a result, the academic realm gradually becomes commoditized and transforms according to the logic and imperatives of the market. Many authors share the concern that commoditization of information is obstructing creativity, academic research and innovation. By enclosing the information commons behind legal provisions, information inequalities are staggeringly growing. Willinsky (2006:17) has called this disturbing upshot the Age-of-information paradox (p.17): despite the profusion of information in the knowledge society, the access to research has declined as a result of the

transformation of knowledge into a capitalized commodity. As a reaction, non-profit organizations are pushing for more open educational content, for greater communication and the establishment of educational communities, where web-based materials can travel across space and time, across countries and continents.

The focus of this thesis is the distribution of these open educational materials on the web. After the literature review, the second chapter presents a critical overview of the two models of knowledge distribution in the digital world, as a commodity and as a gift. It also discusses the social nature of information. When presenting the case of Creative Commons, I explain the logic behind open licensing and show the movement's role to play as an intermediary between conflicting interests. In this chapter, I also define some major concepts such as open access, open educational resources and the information commons. In the last part of my thesis, I hypothesize about the changes on the way, draw some conclusions based on these transformations and list the questions that still remain to be investigated.

2. Literature Review

2.1 Information Society – History and Theory

"The Stone Age was marked by man's clever use of crude tools;
the information age, to date, has been marked by man's crude use of clever tools."
Anonymous

In the last two decades writers have actively offered labels to the complex times in which the internet and information came to play a central role. Whether enthusiastic or skeptical about the fast changes appearing in our societies, authors from different disciplines started framing concepts: "information society", "post-capitalist," "data society", "knowledge economy", "digital revolution", are just some of the terms that inundated the social sciences, hinting at the centrality of information in post-industrial times. Among the more encompassing concepts used in writings on the subject were "digital age", "virtual age", and "technocratic era". Often authors use them interchangeably as synonyms although they carry different nuances. These labels are problematic, because they use such diverse terms as information, knowledge, data and media almost interchangeably

An important question is do we need terms and do they help us understand the changes better or on the contrary they camouflage the reality and mislead us? Having to read about the same thing being "dressed" in so many different names is indeed confusing and I would say unnecessary, nevertheless, unavoidable. These terms usually signify a radical change and are used to distinguish between what it was and what is now. Although extensively used in the academic literature, the "information society" concept makes no difference. It is "evocative, but fuzzy and evasive" (Webster 2002: 10), often proclaimed highly controversial. What makes the term disputable is the way different authors adjust it for

the diverse purposes of their research. The belief that there is more information today than before has been rejected by many social scientists. As many authors have shown, information is an old resource that has always been an integral part in enabling people to achieve their social and economic goals (Lax 2001; Kalmus 2007). Some researchers approach information in a qualitative way, thus saying that information may proliferate but its value for the society will not increase.

The term also provoked criticism because of being used in the singular, thus reducing the world into one common denominator: the idea of one global information society is flawed because the transformations differ from country to country. Another shortcoming of "information society" is that it leaves out an important element of the new society – communication, which is central element in the changing societies. Communication helps us to distinguish between the information society concept and the knowledge-sharing societies. The latter implies desire and readiness to cooperate and share, emphasizing not only on the production of information, but also on its exchange.

One of the earliest writings about the information society comes from Masuda (2004[1990]), who offers an interesting comparison between the main features of the industrial and the information society: the information society, in his opinion, will be a different type of society based on the production of information values. Computer technology will be in its center and will replace the mental labor of the human beings. There will be a great expansion of information, called by Masuda "an information revolution." Thus, information-related industries will be built to serve the growing need of information production. Socioeconomic development will be dependent on information. Masuda believes that "in the Information society, *citizen movements* (emphasis by the author) will be the force behind the social change" (Masuda 2004 [1990]: 17). Moreover, he writes that "the most

advanced stage of the information society will be *the high mass knowledge creation society* (emphasis by the author)" (Masuda 2004 [1990]: 20).

Leadbeater (2004 [1999]) presents a more encompassing view of the transformations our societies are undergoing. According to him, there are three forces present in the modern economies: finance capitalism, knowledge capitalism, and social capitalism. The basis of the first force is global finance, of the second one – knowledge diffusion, and of the third – social capital and collaboration Leadbeater (2004 [1999]) suggests that these three forces can be channeled to work together toward "the fundamental goal of creating and spreading knowledge" (p.30).

Knowledge is also a central element in the term "post-industrial society" coined by Daniel Bell (1974). According to Bell, in order to succeed the post-industrial society in the core of which is the economy requires the existence of a highly educated professional class comprised of rational individuals capable of coordination, but also of independent decision-making. Post-industrial society is organized around knowledge for the purpose of social control, innovation and change (Bell1974:20). In the post-industrial society the economy manages to subdue the power of the polity. It also attempts to subdue the power of the social and the cultural realm, turning its products into commodities whose value is judged according to its salability. A very contradictory role in this society is played by technology. Bell believed that technology is the driving force for change, for eradicating inequality, and for the construction of a society where scarcity is to be overcome (Bell 1974).

Robins and Webster (1999) offer an alternative way of approaching the information society. They suggest that one should see the information society in terms of "differential and uneven access and control over information" rather than putting technology as the main agent of change (Robins et al. p.63). In a way, technology engenders change, but is not the change

itself. Other authors, sharing the reductionist doctrine of technological determinism not only distrust, but fear technology and its impact on society and culture.

"The post-industrial society […] is also a 'communal' society in which the social unit is the community rather than the individual, and one has to achieve a 'social decision' as against, simply, the sum total of individual decisions" (Bell 1974:88).Bell pointed out participation as a main prerequisite for the community. To avoid conflict a politics of consensus must be achieved (Bell 1974: 88). Habermas' concept of the public sphere can be used as an example to what Bell was describing. Nowadays, the rational-critical debate about public issues is mainly taking place in the virtual space. It is conducted, as Habermas saw it, by private individuals led by arguments in their decision making (Calhoun 1992:1). The individual coming from diverse backgrounds, formed in the private realm, step now in the public sphere to express his arguments.

As Calhoun (1992) writes, the factors determining whether a public sphere is adequate to a democratic polity are the quality of discourse and quantity of participation. By the openness to popular participation, Habermas believed greater societal integration will be achieved. The unrestricted dissemination of information and ideas is a prerequisite for the functioning of the public sphere. However, in reality, powerful economic interests restrict the flow of information by enclosing it into private domains in the form of a commodity. The forum for debates is thus being restricted only to those who can afford to pay. As a result, "the sounding board of an educated stratum tutored in the public use of reason has been shattered; the public is split apart into minorities of specialists who put their reason to use nonpublicly and the great mass of consumers whose receptiveness is public but uncritical (quoted in Calhoun 1992:26)." He criticizes mass culture because it replaces the active public discourse with a passive culture of consumption that transforms individuals into apolitical, asocial consumers. He fears the tendency in capitalism to merge political with economic interests

which in his opinion is a dangerous threat to the social system. Habermas believes that the public sphere should occupy a distinct space separate from the state and the economy. In his view, the process of social interaction and collective rational decision making should prevail over economic interests. If we follow Habermas understanding of public sphere, the exchange of information should go beyond simply sharing knowledge, but transforming the already existing knowledge during reasonable debates (Calhoun 1992:29).

Among all of these attempts to explain the dynamic times in which we live, the approach that Dyson et al. (2004[1996]) adopt has been, in my opinion, the most apposite one. According to them, there have been three economy waves. The First Wave economy has been centered on land and farm labor as the main factors of production. The Second Wave intersects with both the First and the Third, in a way that it unites land, as a valuable resource from the First Wave, with labor which productivity has been enhanced by the technologies of the Third Wave. They argue that we have entered the Third Wave; however, in order to realize its potential to be the Knowledge Age, we should eradicate the Second Wave laws and views, because they do not operate anymore and only delay the arrival of the Third Wave period. Dyson et al. (2004[1996]):32) believe that our society should confront the dramatic changes not with opposition, but with redefinition of major concepts transformed by the information technology revolution such as: "freedom, self-government, property, competition, cooperation, community, and progress." Since I cannot afford not using any of these terms throughout the paper, I chose the *Third Wave* (Dyson et al. 2004[1996]) because in a way it encompasses all of the above mentioned terms in a more innovative way without oversimplifying the relation. More important than the term is the conflict it represents – the conflict between what Dyson et al. (2004[1996]) have called the Second and Third Wave.

Indeed, in a more creative way, it is Mansell (2008) who, in my opinion, most successfully manages to present the contradictory reality by borrowing a famous quote from

Dickens, "It was the best of times, it was the worst of times; it was the age of wisdom, it was the age of foolishness; it was the epoch of belief, it was the epoch of incredulity; it was the season of Light, it was the season of Darkness; it was the spring of hope, it was the winter of despair; we had everything before us, we had nothing before us…"(quoted in Mansell 2008:2). To make predictions in this full of contradictions, fast-paced digital world seems to some extent naive, if not futile. However, this is what makes the stakes higher and the research even more exciting.

2.2 Information and Communication Technologies: Web 2.0

Without exaggerating the revolutionary spirit of our age, most of us would still agree that we are living in dynamic times, when time and space are compressed within an ever more accelerating existence and when technology has made possible a more connected world. In this dynamism to stay static means to miss opportunities. While social scientists disagree about the labels attributed to this new world in which information and technologies came to play a central role, they all seem to share the belief that the internet will change our lives, regardless of whether we choose to use it or not. Many authors suggest that our societies in the Information Age will be radically transformed – from the economy to the power structures. Manuel Castells's concluding remarks in his book *The Internet Galaxy* illustrate this point quite successfully: "For as long as you want to live in society, at this time and in this place, you will have to deal with the network society. Because we live in the Internet Galaxy" (Castells 2001:282). We have come to a point where to refuse to see the information reality is difficult if not impossible.

Among the technological innovations in the last two decades, the internet was by far the most influential socially. It had a great impact by enabling "communication of many to

many, in chosen time, on a global scale" (Castells 2001:2). The internet facilitated new modes of information distribution across large number of networks and actors. It also created a virtual world which at first seemed parallel, but is more and more intertwined in the real world. It made possible a network of decentralized knowledge production and many-to-many distribution. The question is whether this production and allocation of information will be in the form of a commodity or a gift, or it would be a hybrid of the two. The internet has created unprecedented opportunities for academics to interact, socialize and collaborate. This new type of communication allows creativity to flourish and culture to renew itself everyday. A second generation of network services appeared on the internet, called rather vaguely Web 2.0. The name, coined by Tim O'Reilly, was used to indicate the new dense social networks on the internet, based on common principles and values, such as openness, access, trust and reciprocity. These networks are characterized by decentralized, dynamic behavior of users who add personal value to the web and who attempt to establish collaborative and interconnected knowledge systems with the freedom to use and reuse digital content.

Turning back to the recent past, we can see that it was the openness of the internet's architecture and its cooperative spirit that allowed for its fast diffusion and development. Unfortunately, the amazing impact of technological invention was seriously curtailed by being appropriated for the needs of the market power and private financial interests. Currently, internet combines a pervasive libertarian ideology with increasingly controlling practice (Castells 2001). Among the disturbing trends for the information commons are technological locks on digital information impeding fair use, new copyright protection for facts assembled in databases, the rise of the "copyright police state" and the expansion of copyright terms (Bollier 2001a:9). Various commercial forces attempt to control information and to turn it into a scarce resource despite its abundance. Although internet can bring so many benefits, it can also be used as a manipulative tool and as such can grant unrestricted

power to the people who govern it: The critical question becomes "whether the remarkable public space made possible by the Internet will be re-designed to maximize the commercial interests of dominant intellectual property owners -- or whether the Internet's architecture will protect the public's interests in free speech, consumer rights, privacy and open, competitive access" (Bollier 2001:3).

John Willinsky (2002: xiii) recognizes two conflicting current events in the history of scholarship: one obstructing circulation of knowledge and one speeding it up. This tension can be examined by the two economic models that he has developed. He argues that the online scholarly publishing community can be divided in a dominating commercial model at present and a growing open access. Both economic models are important, because "without a legal monopoly not enough information will be produced, but with the legal monopoly too little information will be used (quoted in Goldstein (1992:82). The commercial model operates on the basis of "pay-per-view" systems and subscription, which allows the reader to peek into the article through the title, abstracts and key words. The open access model, on the other hand, offers the whole article for free, while also allowing the reader to make changes and modify the content.

If we have to paraphrase these two models into our commodity-gift dichotomy, the commercial model turns educational materials into economic assets exchanged for financial benefits, which the open access model puts for free on the web to serve the public interest.

3. Critical Overview

"To live effectively is to live with adequate information"
(quoted in Mansell 2008:3).

Throughout the study, I use the terms knowledge and information interchangeably for simplification. Certainly, these terms are much more complex and varied than this research suggests. However, a thorough analysis requires an extensive epistemological discussion that is beyond the scope and aim of this study. What follows is a brief review of the main distinctions between data-information-knowledge and a concise description of the nature of knowledge.

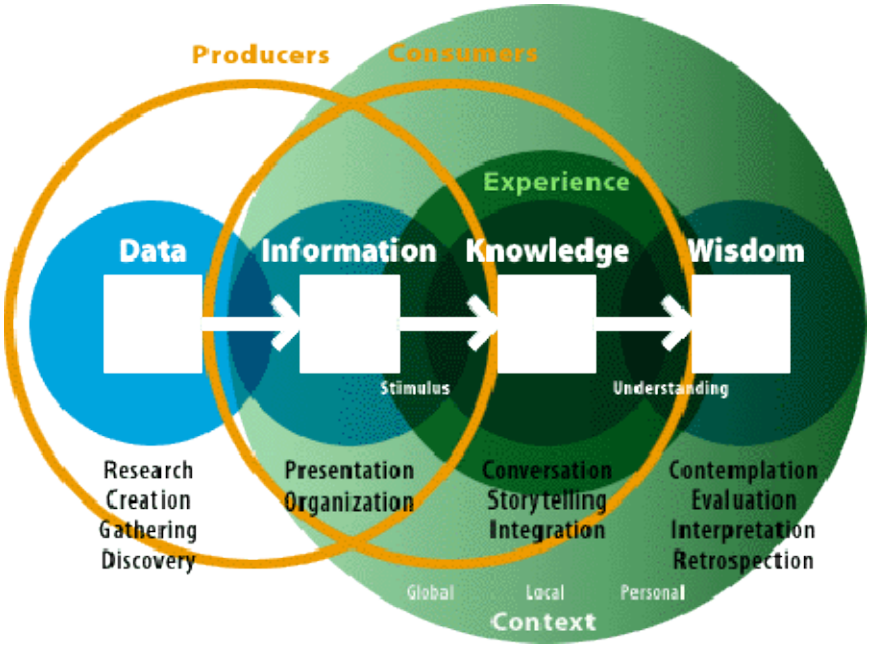
3.1 Data/ Information/ Knowledge

Data can be imagined as raw material that is collected through our five senses. The root of the word is Latin and means "things given," namely the signals and symbols that surround us (Hassan 2003:119). As Hassan (2003) writes, in its raw form, data is simply a vast meaningless mass. In order for this raw data to receive meaning it needs to be processed, interpreted into information. Information, on the other hand, is "a description, a statement of data in the abstract" (Hassan 2003:120); "data processing in the broadest sense" (Bell 1974); "a raw data, scientific reports of the output of scientific discovery, news, and factual reports" (Benkler 2006:313).

The process of turning information into knowledge is much more complex and requires "a vast reservoir of pre-existing knowledge residing in the mind, both inherited from our ancestors and based upon the experiences of our own lives to date"(quoted in Hassan 2003:121). As Siemens (2006:vi) writes, the difference between knowledge and information is that all knowledge is reducible to information, but not all information can be said to be

knowledge. Indeed, “information can in a very real sense be “non-knowledge” (UNESCO Report 2005: 47).

In the digital world, knowledge needs to be reducible to information in order to be turned into a codified knowledge. To codify knowledge means to translate it into information. After knowledge has been codified, it needs to be processed and communicated. Codifiable knowledge can be easily transmitted contrary to the tacit knowledge, which is learned by experience. Knowledge has been also divided into: knowing-what; knowing-why; knowing-how; and knowing-who (OECD 2000). The knowing-what and knowing-why are the two areas of knowledge that can be covered by the OER. The other two kinds can be achieved by putting into practice what one has learned. To distribute information, which is the ingredient of knowledge is easy. This is so because of its specific nature and the medium that allows this transfer, the internet.



Information Design http://www.nathan.com/thoughts/unified/undspectrum.gif

A crucial characteristic of information is that it can benefit people without restricting others from enjoying it too. Sharing only allows information to multiply (Merges et al. 2006). Knowledge is build upon sharing of expertise. It is in the nature of research to be open-ended and unfinished, meaning it keeps in itself a living potential to be revised, continued. If locked, knowledge stays underexploited. Knowledge is often depicted as a process, a cycle of consuming knowledge and then producing knowledge. We always build on something already existing. A small contribution of many people amounts to a significant outcome. The value of knowledge being openly spread surpasses economic value. The value of knowledge, which is measured in non-monetary terms, increases by its utilization. Information is like a "life form" that should be allowed to move, to change, to leave a trail. In its nature, it needs to be "free, experienced, multiplied" (Barlow, 1994). As Bateson has put it quite beautifully, "Information is a difference which makes a difference"(quoted in Barlow 1994).

"The fundamental difference between ideas and tangible property is that ideas are not characterized by excludability. When we "consume" an educational material, we do not exhaust it, because it is not depletable by use. There is no excludability present in information's nature. "Knowledge is not proprietary; it doesn't 'belong' to any one individual or institution. Rather, knowledge is a social utility; it advances the search for truth. In a free and educated society, there can be no intellectual property right in the truth" (Haulsee, n.d.p. 9). Instead of sharing with one or keeping for yourself, in the digital world information can be shared with millions of people instantly. Knowledge can be communal, in many different places at the same time, and can reach hundreds of people without leaving the *initial owner*. Once shared, information cannot be retrieved back. It is also difficult to restrict, because, as some authors have figuratively explained it, it "leaks". Another specific characteristic of knowledge is its short life span - it depreciates with time and with the new knowledge that is

being created (Barlow 1994). Information is easy to spread - to reach more people it does not require additional cost.

The case of knowledge is different than with any other commodity, because the digital reproduction and distribution of already created knowledge has zero marginal cost which makes any positive price already too high (Cortright 2001). Because of these characteristics, knowledge is often considered a near-perfect public good. In economic terms, a public good is "something that is regarded as beneficial and can be provided to everyone who seeks it, without their use of it diminishing its value" (Willinsky 2006:9). As Cortright (2001:5) writes, "private goods are excludable and rival, and produced by markets, while public goods are non-excludable, non-rival, and produced by government, or other non-market means, like charities". Because knowledge shares most of the characteristics of a common good and because it is so difficult to control its flow (also referred to as the "spillover of ideas"), the market has little incentive to help its distribution and to maintain innovation in the educational sector (Coates 1992). This means that it will be the role of the government through subsidies to keep the production of knowledge active. This, of course, raises a whole new range of worrisome issues about power. Even when knowledge seems free, "this type of gift is in no way free, since it must be subsidized by the state" (Frow 1996: 91). If we have not paid for something we now possess, someone else did instead of us. "It's human nature to want something for nothing. Unfortunately, excellence rarely comes without a price" (quoted in Willinsky 2006:7). This type of thinking has turned information in an asset in the information society.

The advancement in the information and communication technologies has made it possible for knowledge to unfold in many dimensions bringing significant financial benefits to those who own. The interaction between knowledge and technology in the economy has been called by economists the New Growth Theory. The major point that this theory makes is

that knowledge is the basis of economic growth and is associated with increasing returns (Cortright 2001). The New Growth Theory challenges the neo-classical approach to production. "Economic development is not a zero sum game; knowledge-based growth can stimulate a self-reinforcing cycle, in which faster growth triggers additional knowledge creation and more growth" (Cortright 2001:25).

The growth of information and the development of communication technologies is expected to change the relations of power in society (Lax 2001). The internet offers an incredible potential for the citizens to express their rights and to communicate their human values (Castells, 2001). It has become the new agora where people can get into contact, exchange worries and hopes. Because of these features of the internet, Castells argue that "control of this public agora is perhaps the most fundamental political issue raised by the development of the internet (Castells, 2001:165). The internet can be used as a manipulative tool and as such can grant unrestricted power to the people who govern it: "in the computer age, the question of knowledge is now more than ever a question of government" (Lyotard 1984[1979]:9). Information keeps an enormous potential locked in itself, "Information is so critical to the nature of governance, and to all efforts to coordinate and direct social behavior, that it translates easily into power. It can increase either the power of government to enforce its authority or the power of people to thwart or resist authority" (Coates 1992:56).

Three decades ago, Lyotard also recognized the pivotal role that knowledge would play in our lives. As he wrote, "knowledge will continue to be, a major- perhaps *the* (italics in the original) major- stake in the worldwide competition for power. It is conceivable that the nation states will one day fight for control of information […] (Lyotard 1984[1979]:5). An opposite claim is that this is not a new phenomenon and that knowledge has always been at the heart of economic growth (Mansell 2008). Imagination, innovation, and the ability to turn knowledge and ideas into products and services have always been central to development. As

a social construction, the status of knowledge is influenced by the transformations that society undergoes. Lyotard (1984[1979]) hypothesizes that the status of knowledge in post-industrial age cannot remain untouched by all the transformations happening, especially technological ones. He discusses knowledge in the context of the most highly developed societies and his discussion reflects the period of commercialization of knowledge, when information becomes the key driving force, the main resource in the economy. Information becomes a commodity on the market of ideas and each of us who needs this information becomes a customer whose purchasing power determines whether we get access to information or not.

In human societies there are two types of exchange relations: commodity relations and gift relations (Rus 2008). Free market economists believe that human beings are driven only by self-interest to maximize their utility and increase the stock of material possessions. Economists believe that the motivations in human interactions can be measured in economic terms (Rus 2008). Social anthropologists, however, have recognized other forms of exchange in society based on totally different principles. A clear-cut distinction has been made between 'commodity exchange' and 'gift exchange', a distinction that has often been used metaphorically for 'market vs. non-market' operations (Rus 2008). In capitalist societies, the commodity exchange prevails, serving as an example of "economic rationality and commercial profit making" (Rus 2008:83). Gift and commodities characterize two different realities. Commodity exchange, according to Rus (2008), establishes only quantitative relationships and the two parties are not bound in any possible way after the end of the transaction. Gift exchange, on the other hand, establishes a qualitative relationship that makes them dependent through a process of expected reciprocity (Rus 2008).

3.2 Thesis: Knowledge as a Commodity

Commodity exchange transactions are usually seen as impersonal, asocial and devoid of symbolic uniqueness (Rus 2008:83). No social consideration, no social obligations or reciprocity is expected after the exchange is over. The object exchanged lacks the identity of the person who is selling it as a commodity. Karl Marx was explicit in his depiction of what commodity is and what role it plays in the capitalist mode of production. Marx defined commodity as "an external object, a thing, which through its qualities satisfies human needs of whatever kind" (Marx, 1867: 125). Commodities have natural and value form; they are the objects of utility and the bearers of value. He further clarified that it is of no importance whether the needs are as a means of subsistence or as a means of production. Quality and quantity are the two points of view from which a commodity can be investigated. Marx stated that the physical properties of a commodity determine the usefulness of the object, or the so called use-value. The exchange-value, "the quantitative relation in which use-values of one kind exchange for use-values of another kind" (Marx 1867:126), has a relative relation to the use-value and changes over time and place. While the use-value differs in quality, the exchange value measures in quantity. Marx clarified that a commodity has a use-value because abstract human labor is being objectified or materialized in it. What determines the magnitude of the value of the article is the so called "socially necessary labor, namely the labor time producing use-value under normal conditions and the average degree of skill prevalent in the particular society. The final prerequisite for an article to become a value is to be useful and, hence, to bring utility" (Marx 1867:131). Marx summarized the substance of value as its labor, and the measure of magnitude as its labor-time. In order one thing to become a commodity, the product must be transferred to another person for whom this article serves as a use-value. This happens through the medium of exchange.

According to Lyotard (1984[1979]), in the form of commodity, knowledge will undergo some major transformations. The goal of producing knowledge will change. As he writes, "knowledge is and will be produced in order to be sold, it is and will be consumed in order to be valorized in a new production: it both cases, the goal is exchange" (Lyotard 1984[1979]:4). The question concerning knowledge will not anymore be "Is it true?", "Is it just?", but "What use is it?", "Is it saleable?", "Is it efficient?" (Lyotard 1984[1979]:51). Moreover, in relation to higher education, Lyotard writes that "the optimal contribution of higher education is the best performativity of the social system." This will happen by creating indispensible to that system skills (Lyotard 1984[1979]:48). In addition, he writes that only knowledge that can be "translated into quantities of information" will be operational (Lyotard 1984[1979]:4), an argument that has been criticized by authors who see potential in the reverse process of transforming information into useful knowledge through the process of learning (discussed in Mansell 2008). The technological revolution and the so called academic capitalism attract universities to the market as a main supplier of the knowledge commodity. This is problematic because by being drawn into the market, universities are contradicting their nature and status, "as independent, autonomous institutions, dedicated to producing public goods (King 2004:105)

On the opposite side of the debate are the people who believe that knowledge cannot be turned into a commodity because of its specific characteristics. Pfeffer (2006), for example, argues that the clientele of the academic products are "often highly specialized and context specific" (Pfeffer 2006:3). In addition, as it usually the case, the main producers are also the main consumers, namely scholars and higher education institutions. Pfeffer(2006) also points out that the same institutions depend on the access to other academic resources. His main argument is that an increase in prices might generate income, but would bring with it even higher costs. In fact, the prices of journals have increased significantly making it

impossible for the libraries to manage their budgets, culminating in a "serial crisis" (Nentwich 2001). Nentwich (2001) argues that this "journal crisis" came as a result of what he has called the second phase in academic publishing. In the second phase, it was the market in the center turning research output into commodities belonging to the private sector. From this business with scholarly works, it was mainly the commercial publishers profiting. The outcome of this was the third phase, which is still in evolutionary stage, developing parallel to the second one, and is characterized by the process of de-commodification (Nentwich 2001).

In this relation, Willinsky (2002) argues that at present there exists an apparent contradiction in scholarly publishing. While the scholars look for recognition and reputation that will eventually turn into a financial reward and academic independence, the interest of the publisher is purely financial. Willinsky (2006) talks about professional pride and vanity, or the fact that "recognition of one's peers is the principal measure of one's contribution to a field of inquiry (p.21). The main incentive behind copyright is precisely this – to ensure the guarantee that the author receives that his work will be read, recognized, cited, and credited and at the same time protected against plagiarism (Willinsky, 2002). As Goldstein (1992) writes "historical materials support the view that copyright is at heart a vehicle of authorship, a means for connecting an author to his audience and enabling audiences to repay the author's effort" (p. 80). Throughout the history the basis of Intellectual Property has been the belief that "the recognition and rewards associated with ownership of inventions and creative works stimulate further inventive and creative activity that, in turn, stimulates economic growth (Idris 2003:3). However, in the digital world this protection acts the opposite way and stifles creativity. Copyright serves as the legal mechanism that makes commoditization of knowledge possible. Intellectual property protection is based on the dominant economic incentive principle. It is often referred to as an umbrella term encompassing five main categories: copyright, industrial design, trade secrets and patents. This legal framework is

used to ensure economic profits but it does so at the expense of limiting diffusion of information. It is contradictory to the social nature of knowledge.

Dyson et al [2004(1996)] argue that "defining property rights in cyberspace is perhaps the single most urgent and important task for government informational policy". Failing to do so will mean that we will be stuck in the Second Wave reality. They emphasize on two key principles: cyberspace owned by the people and not by the government; and clarity in the new cyberspace property rights. One of major mistakes done by governments, Dyson et al. [2004(1996)] argue, is that they take the Second Wave property laws and apply them to The Third Wave. If one is to look only at the questions concerning property they might seem the same as several centuries ago: *What does 'ownership' mean? What is the nature of property? Who should be the owner? What is the distinction between private and public?* However, the answers are fundamentally different. What is different is that the internet incited a transition "from a print culture of scarce supplies of fixed, canonical works to a digital culture of constantly evolving works that can be reproduced and distributed easily at virtually no cost (Bollier 2007:8). As Mueller (2005:11) writes, "the discourse on property rights in information […] needs to develop principles and criteria regarding when it is socially optimal to push for 'commons' and when it is best to permit private appropriation".

The people who believe in cooperation and freedom of information and innovation see many worrisome trends in the contemporary Internet space and in the legal framework that defines it. Both governments and publishing companies attempted to enclose the public domain of information into privately controlled markets. "As copyright increases in length, breadth, depth, and strength, creative practice is squeezed to the margins (Cohen 2006:39) and the commons are shrinking. Among the disturbing trends for the information commons are technological locks on digital information impeding fair use, new copyright protection for

facts assembled in databases, the rise of the "copyright police state" and the expansion of copyright terms (Bollier 2001:9).

In the last decade, there has been a growing awareness of the research community that its products should not be commoditized, but should instead be widely available to everybody (Nentwich 2001). After all, "the very purpose of the academy is to promote and maintain the intellectual commons (Haulsee, n.d)." The digital age made it possible for non-profit organizations to initiate global internet networks of open educational resources hoping to reach millions of people, thus changing our society. To put it in Willinsky's own words, "Open access is clearly a child of the internet, an upstart that takes advantage of this new technology to reduce publishing costs, while shifting those reduced costs from readers to institutions, authors and others with an interest in the circulation of knowledge (2002)." Inspired by these opportunities many authors started talking about "socialization of knowledge," the idea of transforming private and individual knowledge into public and collective knowledge. It is a process consisting of four intertwined and interrelated phases: sharing of knowledge, making knowledge available, adaptation/adjustment, and delivery (Assumpção 2005:12). The first phase, sharing of knowledge, has often been associated and compared with the theory of the gift that I will explain in depth in the next section.

3.3 Anti-thesis: Knowledge as a gift

Mauss wrote in the fifties that "fortunately, everything is still not wholly categorized in terms of buying and selling. Things still have sentimental as well as venal value […]. We possess more than a tradesman morality" (Mauss 1990[1950]:65). Recently, the belief that there is a rise of collaboration and collective action prompted by collective needs and complex interdependencies aroused discussions whether the emerging networks of scholarly cooperation are based on the principle of gift exchange.

Gift exchange became an important concept around 1920s with the work of Malinowski on Kula and several years later with Mauss' study of exchange in the archaic societies. More than half a century ago, Mauss argued that the morality and organization of gift transaction, although not so visible are still present in our societies (Mauss 1990[1950]). Mauss was right about that. Gift economies exist even in contemporary capitalist world and can be clearly observed in the digital space.

A gift economy is "a web of enduring moral and social commitments within a defined community sustained through the giving of gifts (goods, services and courtesies) without any assurance of personal return"(Bollier 2001b:19). An interesting feature is that it arises in populations with an abundance of resources. As Raymond (1998) argues, "abundance makes command relationships difficult to sustain and exchange relationships an almost pointless game. In gift cultures, social status is determined not by what you control but by *what you give away* (Raymond 1998:81), "the main system of being powerful is to be wealthy, and of wealth is to be generous" (Malinowski 2004 [1922:167]). In gift economies the result of the gift exchange is in most of the cases immaterial, bringing pure status, but not leading to a wealth accumulation: "Wealth has no accumulative end. It exists to be expended or distributed. It is not in itself a source of prestige; instead it provides prestige because it is given or sacrificed (Henaff 1998:39).

Through the transactions, certain values are being transferred as well. In order to understand the gift exchange better, we should look at the nature and logic of the thing given. It is exactly this belief in the spirit of the gift that imposes obligation to return it. Mauss writes that the gift is not inactive. Within itself it carries individuality, its "place of origin" and it is in its nature to be reciprocated (1990[1950]:13). Thus, "to make a gift of something to someone is to make a present of some part of oneself" (Mauss 1990[1950]:12). It is widely believed that presents are voluntary and do not cost the receiver anything. They appear free

and disinterested. “In the gesture accompanying the transaction, there is only a polite fiction, formalism, and social deceit, and when really there is obligation and economic self-interest" (Mauss 1990[1950]:3). In reality, gifts are strictly compulsory and economically self-interested and in turn an obligatory reciprocity follows (Mauss 1990[1950]:5). Each gift engages the giver and the receiver in a special union, in a social system that requires commitment and reinforces the role of solidarity. When there is a gift, disinterestedness cannot be present. Mauss sees in the gift exchange the opportunity of building and sustaining the social contract. The gift holds a magic power over the recipient. Repayment of the gift is rarely immediate. As a result, a relationship of mutual interdependence is created between giver and receiver, as well as between receiver and the gift. In the gift exchange, power relationships are being formed. These social ties are in the form of a “debt” that the receiver needs to pay off to the giver. It is a form of a social contract that binds the members of the community together. Gift exchange, if accurately practiced, establishes social order, defines social roles and creates cohesion. The gift creates social relations not only during the gift receiving, but even after a gift has been reciprocated. These relations presuppose interactions, interdependence and obligation to one another.

When we apply the concept of gift to knowledge distribution in the digital world, it becomes clear that the theory fails at the point where social relationships need to be built. This is so because often the supplier of knowledge materials is known and the receiver of this gift is anonymous. The principle of reciprocity is often obstructed by this anonymity. In the particular case of open access to educational materials, the exchange is initiated mainly to serve the purpose of spreading knowledge and not necessarily of building social relationships. I download and use your materials, but I do not feel obligated to reciprocate. I might volunteer to do so because I share your convictions that knowledge should be shared in order to proliferate; however, I am not socially bonded to act in this way.

Knowledge sharing is like a digital dialogue between a person who shares knowledge and a receiver, between a knowledgeable person and one who wants to know. As Liu (2008) writes, knowledge exchange is the process where individuals exchange their (tacit or explicit) knowledge and jointly create new knowledge in a knowing process within a social context that is also constructed out of these activities (p.2). Exchange of valuable resources saves time, avoids redundancy and allows for an important dialogue between researchers. "The general public far outstrips the expert community alone in terms of its available time, motivation, ability to keep much information up-to date, and ability to write"(Sanger 2006:3).

4. Synthesis of the two approaches to knowledge

4.1 Creative Commons Case Study

December 16th 2002 marked the beginning of Creative Commons, a non-profit organization committed to the expansion of the open digital domain of creative work. In a video during the opening celebrations, two well-known people, John Barlow, a founder of the Electronic Frontier Foundation, and the late Jack Valenti, former president of the Motion Picture Association of America, congratulated Lawrence Lessig and his colleagues on the launch of Creative Commons[1]. What made this address remarkable was the fact that Barlow and Valenti represented the complete opposite sides of the Intellectual Property (IP) debate; one side arguing for the abolishment of the IP legislation, while the other supporting its expansion. What united both greetings was their approval of the CC organization and the mission it aspired to accomplish.

In this video address, Barlow said that the right to know what all people know is implicit in freedom of speech. "Creative Commons," he said, "by setting up essentially a conservancy of the mind is preserving and expanding that right to know and making it possible for the fruits of human intelligence […]." Barlow acclaimed the Creative Commons mission to preserve human heritage by making its way through the cumbersome legal framework. In his own words, "in the final analysis, what you are doing now is to assure that your great great great great great grandchildren will have access to the glorious of your age and all others, and that it will not be buried in the bodies of the institutions that are trying to clutch it to their breasts even as they totter dying". While Barlow saw the term Intellectual property as an oxymoron, Valenti made it clear that he believed in Intellectual Property and

[1] Valenti & Barlow Video Greeting (http://www.youtube.com/watch?v=qjGtx9Ka7co)

was ready to stand up for it. “It is important that those people who have copyrighted material […] and who want to protect it can, so that they can make sure that it can move through various venues where that material is brought to the public and given to consumers at fair and reasonable prices”.

What followed next was an important statement that managed to bring together the conflicting views on IP under the overarching concept of Creative Commons. Valenti acknowledged that there might be people who want to give up their copyright and decide to put their work in the public domain for other people to use freely. He saw the Creative Commons concept as a balance between the protection of copyright material and the dissemination of material that owners want to distribute for free. “I thank you for bringing this concept to life and I think it is something that is useful and worthy which is why I support this […]. And I hope that the fact that I am supporting you [Lawrence Lessig, one of Creative Commons founders] in this does not ruin your reputation” (Valenti 2002).

Bringing the two opposite sides of the IP debate together, Creative Commons gained the reputation as the organization that could serve as a mediator and coordinator between the two extreme views, offering a neutral ground on which dialogue can be carried out.

Creative Commons (CC) was established as a non-profit organization dedicated to increase the amount of cultural, educational, and scientific creative works in the public domain, also called “the commons”. The “commons” resemble a public storehouse, where authors agree to “pile up” their own works for free use under specific terms.

Although the name Creative Commons is pretty self-explanatory it is useful to analyze more closely what the commons represent. This is important, because the term has been mistakenly disparaged due to its historical origin. The term *commons* is often associated with an article “The tragedy of the commons” by Hardin (1968), who argued that a common limited resource would be over-exploited by self-interested individuals who, rather than using

their fair share of the public resource, would in fact consume as much as they could until the resource was depleted. In economics, this problem has been called "the free rider."

This comparison of Hardin's theory of the commons and the Creative Commons is flawed because the former is based on the exploitation of natural resources, while the latter consists of non-depletable, non-excludable, intangible knowledge or information resources. Not only will the information commons not be destroyed, but on the contrary, more value will be created if additional people become part of the social community (Bollier 2007). The commons are also based on the belief that knowledge is inherited and everything we create now is an advancement of previous knowledge. The emphasis is on the social utility that information generates if it is not enclosed into private domains restricted by excessive ownership. Research is dependent on the availability of information. As Benkler (2006) writes,

> Science is built by many people contributing incrementally—not operating on market signals, not being handed their research marching orders by a boss—independently deciding what to research, bringing their collaboration together, and creating science. What we see in the networked information economy is a dramatic increase in the importance and the centrality of information produced in this way (p.63).

The intellectual commons paradigm, also called the information commons, the knowledge commons, the public domain, is one way to declare that certain resources are "not for sale" (Bollier 2007:7). As Bollier himself argues "the commons is more persuasive than we may realize, and that it can be a highly effective way to create economic and social wealth" (p.1).

Creative Commons was created as a reaction to the worrisome transformation of the free internet culture into a *permission culture*, "a culture in which creators get to create only with the permission of the powerful, or of creators from the past" (Lessig 2004). It also came into existence amidst the new *participatory culture* happening on the internet through the Web 2.0. The principle of active participation into the cultural objects is central to the new Internet participatory culture. It transforms the passive observer of cultural artifacts into an

active creator of such. It allows for much closer engagement with the cultural objects. Participatory culture turns individuals with access from mere consumers into producers, into authors and publishers. Internet allows computer users to become creators by borrowing from existing information, transforming it and turning it into a different object; drawing from the same source of information each of us manages to create something different. It is a phenomenon that bridges spaces and time, people and communities and allows for a new mode of communication based on sharing and cooperation, the so called *participatory information society initiatives* (Mansell 2008:13). However, the potential that technology offers for people to be creative cannot be fully realized because of the laws which are not suitable to the digital world. The solution, in Lawrence Lessig own words, is "to move away from a maximalist position [and] to create a future in which creativity can occur in a protected space without taking away anyone's rights"(Rohter 2006).

In 2002, Creative Commons launched their first licenses. The Free Software Foundation's GNU General Public License became the initial inspiration for the Creative Commons' licenses. According to OECD report statistics, two years later there were six million linkbacks, and one year later, the number increased to forty-five million. The number of users kept growing to 145 million linkbacks in 2006 (OECD Report 2007:75). The same year on Flickr, an online photo management and sharing website, there were over 25 million photographs licensed by Creative Commons (Hewlett Foundation Report 2007:14). As the Creative Commons statistics show, the popularity of Creative Commons is growing- the total number of Creative Commons licensed works amount to 150 million as of December 2008. The involvement in open content projects is growing more and more every day. From a US-based organization, in the last years Creative Commons has become more and more an international one, being legally recognized in 51 other countries. Creative Commons is working on transferring the licenses to different countries by making it suitable for their

national copyright frameworks. This transfer involves the licenses to be translated and adapted legally to fit the particular legislations. The long term goal is the creation of a global sharing network of scholars from around the world.

Lessig's understanding of the nature of creative works can serve as a good illustration of the important relationship between the commercial and social nature of knowledge. He presents creative works as having two lives: one private, commercial and one public, noncommercial. During the first life is when the author or the artist can make profits and charge money for his work; during the second life of his work he can transfer it to the commons. CC aspires to make possible this work to be turned over to the public domain without legal complications. In the second stage, we are not merely talking about the use of academic materials, but also their reuse. This process of reusing old materials has been creatively called *intellectual recycling*: "It's a code of conduct for the digital age: recycle stuff when you're done with it .... Keeping under copyright something that no longer has value is like keeping all your old newspapers.[…].You never know what people will do with something you're not using" (quoted in Koman 2003).

If we imagine digital knowledge distribution as a wide spectrum, at one end is situated knowledge as a commodity, where also the business interests reside, and at the other end is knowledge as a gift in the public domain. Creative Commons is in the center of the spectrum, bringing the two into a synergy. Their approach of turning creative works into public goods is voluntary and libertarian. It enables creators to take advantage of their private rights while still benefitting the community. It creates public goods by employing private rights. While copyright clearly indicates the boundaries of the property ground you are not allowed to step on, Creative Commons licenses redraw the frontiers by pointing out to the shared space instead. Creative Commons also differs from copyright in that it takes the decision-making power from the lawyer and returns it to the creator. Creative Commons uses "private rights to

create public goods" (Creative Commons website). It "gives tools to creators to make a choice about copyright.[…] To take control of their own creative impulses."[2] However, Creative Commons licensing is not an attempt to challenge and eliminate the existing legal framework. In fact, it is derivative from copyright, building upon its platform; "Creative Commons licenses can cover everything that copyright covers."[3] Creative Commons's goal is to establish a new "reasonable copyright" (Willinsky 2006:40) that will offer a broader space for creative works and more flexibility for the creators and the users of these works; thus, referred sometimes as the "flexible copyright system".

Creative Commons attempts to bring together in a constructive dialogue copyright legal framework and the producers of digital content. Creative Commons offers authors and artists the opportunity to choose among various free licensing tools, alone or in combination, through which they can make their work widely available while still maintaining copyright. There are six types of Creative Commons licensing: *Attribution*, *Attribution Share Alike*, *Attribution No Derivatives*, *Attribution Non-Commercial*, *Attribution Non-Commercial Share Alike*, *Attribution Non-Commercial No Derivatives*


Attribution
You let others copy, distribute, display, and perform your copyrighted work — and derivative works based upon it — but only if they give credit the way you request.


Share Alike
You allow others to distribute derivative works only under a license identical to the license that governs your work.


Noncommercial
You let others copy, distribute, display, and perform your work — and derivative works based upon it — but for noncommercial purposes only.


No Derivative Works
You let others copy, distribute, display, and perform only verbatim copies of your work, not derivative works based upon it.

Retrieved from Creative Commons
http://creativecommons.org/about/licenses/

[2] A Science Commons video < http://sciencecommons.org/ > Last accessed May 22, 2009
[3] A Science Commons video < http://sciencecommons.org/ > Last accessed May 22, 2009

Each license has three formats: human-readable, lawyer-readable, and machine-readable. By offering these six alternative licensing solutions Creative Commons enables authors to choose from a broader range of legal conditions: from copyright, which reads "all rights reserved" through "some rights reserved" to "no rights reserved" (Creative Commons website[4]). By opting out of some rights the creator benefits from the increase in the number of people who can access his work.

According to the OECD report (2007:77), open content licensing will have a great impact on facilitating knowledge exchange in a "culture of cut and paste, remix, collaboration and instant internet access".

By granting prior permission through its licenses, Creative Commons found a way for users to evade contacting the owner every time they want to use, reproduce or distribute someone's work. Through the licensing the creator can reach millions of users at the same time ("one-to-many structure"), eliminating the need of hundreds of users to contact the creator one by one, saving precious time for both sides. Creative Commons philosophy is simple- creators say No or Yes to anticipated, but not yet asked questions about how people can use their work. The logic seems straightforward- by making it easier and more reasonable for people to share their content in the public domain, more and more authors and artists will join.

Creative Commons licenses are not the only type of open licenses available in the virtual space (among them Creative Archive, AEShareNET, Click-Use, GNU). However, Creative Commons licenses have been widely preferred because they are created in a simple way in order people with no legal background to operate with them easily. The fact that they are machine-readable makes search for content easier and the degree of legal openness easily recognizable. In addition, Creative Commons licenses allow much wider level of engagement

[4] <http://creativecommons.org/> Last accessed May 22, 2009

with content that is clearly stated in advance – permission to adopt, modify, and even merge different materials. Many Open Access projects, such as MIT's Open Courseware, Wikiversity, Connexions, Stanford Encyclopedia of Philosophy, eXtension, Citizendium, Open Context and a great number of others, are using Creative Commons licensing.

4.2 Creative Commons Learn Initiative (ccLearn)

In 2007, in order to accommodate the growing number of open knowledge content shared over the internet, Creative Commons started a new educational initiative called ccLearn. While Creative Commons' main task, as mentioned, is licensing, ccLearn has a wider task: it is committed to support the creation, distribution, and reuse of open educational resources by minimizing the legal, technical, and social barriers to their use and sharing while removing the legal and technical barriers that are obstructing their diffusion. ccLearn has an "umbrella function"(ccLearn 2008) in the OER movement. It aims to unite different projects into an effective network of sharing based on an open infrastructure with no legal, technical and social barriers. ccLearn encourages thinking as part of a network – not just finding the solution for the problem of separate initiatives, but looking for a global solution in the interest of the movement and in the interest of knowledge distribution worldwide. It does that by encouraging dialogue, communication and coordination among disparate projects. ccLearn has become an advocate, a coordinator, and a leader in the OER exchange functioning as the translator of the plans and goals of the movement.

ccLearn operates with works created by the market and by the community, and some by both. It has assumed the difficult responsibility to regain the fragile balance between the public and the private domain, the communal and corporate interests, between open access and commercialization. ccLearn bridges these two approaches to knowledge. It gives power to the knowledge producers to decide whether they want to use their materials as public or

private goods. In that way, it brings about reconciliation between the two conflicting sides of the knowledge distribution debate.

In a video, Ahrash Bissel, the Executive Director of ccLearn explained that there are several main areas on which they are working on. First, to explain how the licenses work and to advise which are suitable for what purposes. Second area is the Creative Commos *licensing for education*- pointing out the fact that the actual motivation for the people sharing educational materials is most of the time noncommercial. ccLearn also works on raising awareness by populiarizing the opporunities that exist, supports social networking of sharing across space and time, across countries and continents. Among the main goals is *facilitating collaboration* by assuming a position of neutrality that allows ccLearn to serve as a catalyst for initiatives, network agent and organizing center of the movement. The emphasis is not simply on sharing OER, but on mobilizing "communities of practice" around the educational materials. ccLearn plans to incite changes in education so that teachers have a greater influence over their pedagogy; as well as to encourage more participation, openness and proficiency in education worldwide.

In order the different initiatives to be united toward one common vision and to have common strategies, a declaration on Open Education was created. In September 2007, activists and leading supporters of the open education movement gathered in Cape Town in order to issue this declaration. The goal of this meeting, supported by the Open Society Institute (OSI), the Shuttleworth Foundation and the Hewlett Foundation, was to declare their serious commitment to the creation of global educational commons, as well as to stimulate the interest of diverse institutions. According to the declaration, the movement's target group is very big and includes: educators, learners, authors, schools, publishers, professional societies, and policymakers (Cape Town Declaration). The Open Education Declaration was created as a collaborative project to which many people contributed with comments and suggestions. It

has undergone several changes. The Budapest Open Initiative was the sampler for the first version. As of May 26, 2009, the declaration has been signed by 1,834 individuals and 190 organizations. The text of the declaration has been translated into eighteen languages.

According to the Open Education Declaration, to participate in the movement means to "create, use, adapt and improve open educational resources; to embrace educational practices built around collaboration, discovery and the creation of knowledge; and to invite peers and colleagues to get involved". The core of the movement is the belief that everyone should have "the freedom to use, customize, improve and redistribute educational resources without constraint" (Cape Town Declaration). This is what Willinsky (2006:xii) has called *the access principle*: "a commitment to the value and quality of research carries with it a responsibility to extend the circulation of such work as far as possible and ideally to all who are interested in it and all who might profit by it."

Although the emphasis is on the open educational resources, it is their promise to influence pedagogy, to transform teaching and learning and thus changing the educational world. It is the movement's effort to make education become more accessible and effective. Open educational resources, as stated in the Declaration, include: openly licensed course materials, lesson plans, textbooks, games, software and other materials that support teaching and learning. Open educational resources' open and collaborative spirit is believed to reinvigorate and strengthen traditional academic values. "Open access is not only about human rights and the greater circulation of knowledge. It is about increasing research impact" (Willinsky 2006: 22). One of the often quoted arguments in regard to scientific research is that since it is mainly publicly funded, the results should be publicly available too. As the 2006 Horizon Report assesses, "knowledge is becoming a community property, and the construction of knowledge is becoming a community activity (p.6)." It is social product, both an input and an output.

In order to realize its long-term goals, the movement adopted three strategies: First, to inspire educators and learners to actively participate. Second, to encourage educators, authors, publishers and institutions to release their resources openly. Third, to turn open education policy in a high priority for governments, schools and universities. These strategies are not simply the right thing to do, but as the declaration states, they will engender far-reaching positive effects on teaching and learning, by accelerating innovation, by giving more control to the learners, by encouraging better learning: “with each person or institution who makes this commitment -- and with each effort to further articulate our vision -- we move closer to a world of open, flexible and effective education for all” (Cape Town Declaration).

5. Current Situation of Knowledge Distribution: OER

The question whether knowledge should be returned to the *information commons* has attracted a lot of attention in recent years, because the digital age has made it possible for non-profit organizations to initiate global internet networks of open access to educational materials hoping to reach millions of people, thus changing our society. The public virtual domain is growing everyday; more and more websites have been created where people exchange free information, course materials, and academic software.

This struggle for open access to information, which for some time was neglected as just the next modern trend, materialized into a movement based on the principle of Open Access. Many universities decided to join the Open Access Movement (OA) with the belief that knowledge should be a public good. One of the best definitions of this movement comes from the Budapest Open Access Initiative:

> […] free availability of the literature on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself (Budapest Open Access Initiative).

Having a more general definition allows for the movement to be more inclusive and diverse, drawing to itself various initiatives under the overarching concept of Open Education. The supporters of the Open Access movement and this vision have undertaken this collective action of turning the private, "fenced" domain of information into a collective domain. The Open Access movement came into existence as a reaction to the commercialization and restriction of information. It was a critique of the capitalist system and resistance against its market forces. OA movement contests control, repression and domination of the market over the relationship of scientific knowledge to political and economic power. It envisions a more

democratic world in which everybody will be able to empower themselves through the access to knowledge.

The Open Access Movement successfully acts at two levels: locally (through the participating institutions) and globally (as a global virtual movement). OA realizes social action through the virtual space. Thus, the question arises at what level this phenomenon should be explained so that the dynamics of the movement is best represented. The answer is that the importance of the phenomena unfolds at both micro and macro level. The Open Access Movement can be approached as a global phenomena or as constructed from individual units sharing, aggregated over time and over the virtual space into a macrostructure of sharing.

Open Educational Resources (OER) are part of the Open Access Movement. OER reflect to a great extent the ideology behind the Open Access movement. Open access not only offers the materials for free, but it does not restrict any further usage of the published material provided there is a proper acknowledgement of the author (Bailey 2005).“ The term “Open Educational Resource(s)” (OER), adopted by UNESCO refers to “digitalized materials offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research” (OECD Report 2007:10). Open Educational Resources include, as specified by the Hewlett Foundation, complete courses, textbooks, videos, exams, software, and any other learning materials or techniques. OER offer a non-discriminatory access and can be used, altered, and shared. They contain information that can be transformed into valuable knowledge. OER are usually distributed in PDF format as a part of courses, thus, also referred to as open courseware. To grasp the potential and size of the movement, it is useful to map the movement by examining the main producers of free educational content. The number of initiatives is growing every day, making it difficult for researchers to present any definitive statistics.

According to the OECD Report (2007), 300 universities are currently offering more than 3000 courses in United States, China, Japan, and France. Although most open educational content is produced in US, new initiatives have emerged at institutions in Australia, Brazil, Canada, Cuba, Denmark, Hungary, India, Iran, Ireland, the Netherlands, Pakistan, Portugal, Russia, South Africa, Spain, Sweden, Thailand, the United Kingdom, and Vietnam (as listed in the OECD Report 2007). The projects range from individual, small scale to institution-based and institution-supported initiatives, both top-down and bottom-up approach to sharing (OECD Report 2007). Among the prominent actors involved in increasing access to OER are UNESCO, the OECD, the William and Flora Hewlett Foundation and Sun Microsystems. In US, projects are often initiated by universities, with a good reputation, such as Rice University, Johns Hopkins, Tufts University, Carnegie Mellon University, University of Notre Dame, and Utah State University. Among them, Massachusetts Institute of Technology is the main initiator and defender of open access, who functions as the translator of the plans and goals of the movement. The power that this macro actor has is grand, because it is the sum of the powers of the other actors (Latour et al. 1992).

At the micro level one can investigate the scholar who is willing to share his materials without financial compensation. When discussing individual sharing, there is one important distinction between the researcher as a consumer of knowledge and as a producer of knowledge. As a consumer of knowledge, she might embrace the idea of accessing information for free. However, as a producer, assumingly she is also a rational profit-driven individual, she might insist on her work not being freely distributed. If she decides to give up on the financial interest, does it mean that the individual is not acting rationally? Indeed, by explaining the individual action through the collective values, it becomes clear that being part of the academic collectivity bring to the actors other rewards, such as reputation, belonging, and academic approval. Thus, it follows that the enthusiasm of the individual to share for free

is comprehensible within the social academic environment and should be analyzed through the meaning that the individual ascribes to her actions. Sharing for free does not mean charity. It assures social interaction, reciprocity and social exchange within the academic community. Individual beliefs that knowledge should be accessible translate into a social phenomenon. The aggregate of these individual sharing creates a macro pattern of sharing for free on the internet.

According to the OECD Report from 2007, no explicit conclusions can be drawn about the OER movement from the available statistics, because the data is too scattered and only allows for a more general picture of who the users and producers of open educational materials are. Nevertheless, there are some broad inferences that the OECD report makes that can be useful for grasping the current development of the movement. These conclusions are important because they can be used for the improvement of knowledge distribution on the web.

First of all, the report mentions that most of the educational content comes from English-speaking, developed countries. The participating institutions in OER movement, both small and large, usually have a good reputation domestically and internationally. Generally, they have established relations with one another so that they can exchange materials. The target groups are mainly post-secondary educators and learners, although access is not restricted to general audiences. Although most of the open content websites do not require log-in (a measure obstructing collecting profile data), it can be said that users of educational content come from all parts of the world and are mainly educators and knowledgeable self-learners.

As probable consequences the OECD report mentions change in curriculum and pedagogy, change in the traditional teaching role, evolution of more independent learners, change in the nature of the text. Internet challenges the conventional method of education. It

is expected that there will be an increase in non-formal and informal learning. Thus, there will be a growing demand of new pedagogy that will recognize the competences that have been gained outside of the traditional classroom (Castells 2001).

The opponents of the OER fear that the materials, whose dominant language is English, will provoke in the long run western centered education and cultural domination. Digital technologies make possible a contact between knowledgeable people and people who want to learn without real interaction but only through the knowledge being represented as information.While Lyotard emphasized that knowledge should have the capacity to be transformed into information, other authors explore the opposite process of transforming information into useful knowledge through the process of learning (discussed in Mansell 2008). It is understandable that when the learning process changes, there is a need for teaching to adjust itself as well. If students have so much information at their disposal available on the internet, they might be bored to sit in classrooms and listen to these materials simply being retold. This enormous amount of passive educational materials should find a way to be turned into an active process of learning. At the same time, many people doubt the expertise that one can acquire by using OER. The internet is often compared to a simulator, "who manages to capture everything, but the risk" (Dreyfus 2001:88). Education is not only about exchange of facts; it requires a face-to-face interaction between teachers and students. Being actively participating in a discussion in a room full of people, some with greater knowledge than others, one assumes the risk of being wrong, of offering a false interpretation. This physical attendance in the literal sense is lost for a person sitting alone in front of one's computer and watching a recorded video lecture retrieved from the Internet (Dreyfus 2001).

In addition, learners differ in their level of knowledge, a fact which has been overlooked by the creators of OER. According to Dreyfus(2001), there are seven stages of knowledge: novice, advanced beginner, competence, proficiency, expertise, mastery, and

practical wisdom. Applying these diversified stages of knowledge acquisition to OER, an important question becomes how we can distinguish which educational resources serve which level of knowledge.

After the legal problem has been accommodated through the CC licenses, it is of great importance to secure their long term preservation and better organization. According to the OECD report, as a result of the rapidly growing amount of learning materials, it becomes more and more difficult to find the resources most relevant to the learner's need. New search engines have been created which people can use to track open educational materials. The limitation of the web crawlers and search engines is that they respond only to syntax and not meaning (Dreyfus 2001). As a result, they offer a small percentage of the relevant information. The problem becomes even bigger when different spammers deliberately influence our search in a direction that they choose. Better and more effective search engines as well as different quality management processes and metadata are needed to facilitate the discovery of the resources. If not, the risk exists that a lot of valuable information will be missed in the huge sea of information. For a quality control of all this research output, critical thinking needs to be applied. Additionally, the use of citations, rating mechanisms, reviews can be helpful to determine which educational materials are preferred and why.

Access for disabled learners, as well as for people with no or limited access to OER in developing countries is a major obstacle as well.To increase access to OER, the learning resources should be translated and localized. Another major obstruction to the growth of the OER movement is funding of such initiatives. A potential threat exists when sponsors of OER are government agencies and foundations that they will force their own "point of view" (Shulenburger 2003). Even when, Internet is already included as an educational tool, other important matters should not be overlooked: investment in technology requires investment in teacher training; also a shift in the skills required to retrieve and process information from the

enormous quantity of materials available – “from learning to learning-to-learn”; and a development of the capacity to “transform information into knowledge and knowledge into action (Castells 2001:259).” The digital divide in education will produce serious disparities in learning performance (Castells 2001). It is expected that disadvantaged children will fall behind their classmates who have the opportunity to develop their information-processing skills in a “better-educated home environment” (Castells 2001). Contrary to this view, other authors see an enormous potential in the internet to make knowledge universally accessible. They see in the internet the potential to bring education to students in the cyberspace “anytime, anywhere, any pace” (quoted in Haulsee, n.d). Moreover, it makes education geographically borderless and not confined by time, thus, challenging the old concepts of space and time.

Looking at the social realities, it becomes clear that people who benefit from initiatives like Open Access have a very clear profile: they have access to the internet, have good computer skills, speak English and have a good educational level. This severely diminishes the access and usefulness of OER on a global scale. There is a growing discussions going on in the last decade about the inequality of access to the Internet known as the digital divide. When we talk about the digital divide, indirectly we claim that the delivery of knowledge has failed which makes the whole process of socialization of knowledge futile. Castells (2001) sees this inequality of access in a global Internet- based economy and a network society as one of the most damaging forms of exclusion similar to being sentenced to marginality. Lax joins him by stating that one of the most fundamental inequality to be rectified in the future will be the access to information (Lax, 2001).

A theory that explains this inequality in the access to technology is the critical theory that posits the diffusion and use of technology as a "scene of struggle" (Warschauer 2003:209). Lax (2001) discusses the relations of power in society being changed by the

growth of information and the development of communication technologies. Few doubt that the internet has the potential to reshape our world; however, nobody can really predict how exactly this transformation will happen. Does the Internet have the potential to destroy or to create; to include or to exclude; to be useful or to be useless? An important question which arises is whether emerging technologies will transform education or will simply reinforce the status quo. Would they serve the old educational arrangements or would they be the spark for the creation of new ones?

The digital divide in education will produce serious disparities in learning performance (Castells 2001). For Castells, disadvantaged children will fall behind their classmates developing their information-processing skills from a "better-educated home environment" (Castells 2001). The access to the knowledge on the digital arena is denied to less-skilled people who do not have computer skills. People who are not fully literate will be marginalized by the new and easily accessible technological and information resources.

We can see that the dynamics in our information society are not so much about information, but about access. If we are deprived of access, we are deprived of a meaningful participation in our societies, because, as Castells point out, the world is being structured with and around the Internet without taking into consideration that the majority of the world population is excluded for one reason or another. As a result, Castells concludes, "the internet can free the powerful to oppress the uninformed; it may lead to the exclusion of the devalued by the conquerors of value" (Castells 2001:275).

6. Conclusion

This thesis set out to examine the dichotomy between knowledge as a commodity and knowledge as a gift with the aim of discovering how this relationship influences digital knowledge distribution in general, and open educational resources in particular. The study of the Creative Commons demonstrated that the two forms of knowledge exchange can co-exist in a balanced relationship facilitated by the flexible infrastructure of open licensing. Creative Commons bridges both approaches to knowledge and gives power to the knowledge producers to decide whether they want to use their materials as public or private goods, and whether they want to be compensated for their work symbolically (through acknowledgement) or financially.

This study emphasized the importance of information commons and the benefits that an unobstructed knowledge sharing can bring to the academic world. The commons and the market should not be seen as rivalries, but as complements to one another. In the mixed type of economy there is enough space for both models (corporate space and the public domain) to operate together. The information commons should be seen as "a vital and constructive part of a free and open market economy, not as its enemy" (Mueller 2005:2). The dynamic interaction between the two is central to the internet and it is unlikely that one could exist without the other in a socially productive way (Mueller 2005). Thus, the interaction between the two models is not only possible, but desirable. The main question, well stated by Bollier, becomes "how to set equitable and appropriate boundaries between the two realms — semi-permeable membranes — so that the market and the commons can each retain its integrity while invigorating the other?"(Bollier 2001b:2). As the analysis illustrated, the gift is more

vulnerable to the attacks of the commodity and needs more protection from the corporate grip so that the relationship between the two can keep its balance.

As it was shown, the favorable conditions for collaboration and sharing have been set up by the internet and the Web 2.0. By allowing mass publishing and mass sharing, Web 2.0 tools spur a huge explosion of knowledge distribution. Internet offers the space where these dispersed materials can be put into one collective place resembling a vast library, a virtual domain that is not restricted by passwords, by payment, or by access. The question is not anymore whether there are enough incentives for sharing. The benefits of exchanging educational materials have become obvious. The question becomes what obstructs us from doing it.

This study pointed out two major barriers to the spread of digital educational content - the process of turning knowledge into a commodity and the digital divide. The process of commoditization does not allow for materials to be distributed on the web freely (at no cost) and openly (with full access, allowing use, reuse, and modification). As shown, the commoditization process has been strengthened through the copyright mechanism. The copyright law was imported from the real world to the digital space without adaptation which created serious discrepancies due to the dissimilar nature of the two realms. The illegal flow of copyrighted work on the web has been very difficult to control. The present reality is that the social needs and norms have become incompatible with the law and as a result the infringement of the law has become a socially acceptable practice. In the recent years, however, there has been a shift from copyright as the default to copyright as an option. The standardized, internationally recognized CC open licenses allow for the utilization of knowledge, making content “active, alive,” and its dissemination legal. Open licensing has also a significant influence over the second barrier, lack of digital access. Creative Commons offers free tools through which it manages to transform the digital divide into a digital space.

By awarding certain freedoms, CC licensing allows for materials to be widely disseminated in printed copies to people with no access to internet. Before, under the "All rights reserved framework", only people with access to internet could benefit. Thus, there exists the hope that the digital divide in terms of knowledge distribution can be crossed through the open licensing.

The phenomenon under investigation is still in an early stage of development, rapidly changing, thus, the questions far outweigh the answers. To paraphrase a similar warning given by Castells about the internet, "research cannot be completed when the research is developing at a faster rate that the researcher is (2001:6)." In fact, OER and Creative Commons are rapidly expanding even at the time of writing and it is difficult, if not misleading to believe we can have definitive statistics or final definitions.

In my analysis, I relied on secondary resources. I reviewed critically a substantial amount of the available literature on digital knowledge distribution. Eclectic theories were used to indicate the richness of the topic. The theoretical approach was interdisciplinary, because a single perspective would not have been successful in revealing the complexity of the topic. By attempting to find the intersection point of law, education and economics, I believe this research unfolded the some of the many dimensions of knowledge distribution. Two case studies were chosen – Creative Commons and OER. The evaluation reports available on the OER helped me to build up an in-depth understanding of the phenomenon of sharing and presented me with a multiplicity of perspectives. Creative Commons was chosen as the exceptional example of an initiative that successfully manages to bring the two approaches to knowledge together.

I believe that in the case of such a contemporary research problem, it is important that the findings are approached keeping in mind the limitations. The reliance of only two case studies, the Creative Commons and the OER, makes the perspective narrower and the

drawing of general conclusions difficult. However, the rationale behind concentrating on case study analysis is grounded in the nature of internet. Large samples are never extensive enough to cover the multiplicity that the digital space offers. In addition, it was unavoidable giving the time constraint. Another limitation of this study is that analysis is developed on the basis of elusive concepts, such as knowledge, information, that are often proclaimed by social scientists problematic, because they are ill-defined. These limitations, however, can be seen as delineating a space for future research. The concepts undergoing transformation have a great potential for further development. In this thesis, I have only touched upon them in a perfunctory manner in order to arouse future discussion. The significance of this study is much larger than the theoretical summary it makes, namely because of the questions it opens that need to be further explored.

There are many speculations as to how the future would look like. We live in dynamic times. While I am writing about Web 2.0 and its specifics, people on the net are already explaining how Web 3.0 and Web 4.0 will look like. It is important to recognize in these changing times that what once was a threat can now be opportunity and what once was opportunity can turn into a big threat. Many authors share the belief that the next stage of human development is the knowledge society, a new type of societal organization based on the principle of knowledge sharing and cooperation. However, there are still many questions unanswered as what transformations would our societies undergo in the knowledge age. One thing is certain and it has been proven throughout the thesis: The future of knowledge is in the open access.

References

Assumpção,Diogo. 2005. *Socializing Knowledge and Reducing Regional Inequalities.* (http://www.iisd.org/pdf/2005/networks_dev_connection_brazil.pdf) Accessed Jan.6th.2008

Bailey, Charles W. 2005. *Open Access Bibliography- Liberating Scholarly Literature with E-Prints and Open Access Journals.* Association of Research Libraries

Barlow, John. 1994. The Economy of Ideas- A framework for patents and copyrights in the Digital Age. *Wired Magazine.* Issue 2.03 (http://www.wired.com/wired/archive/2.03/economy.ideas_pr.html) Accessed May 1, 2009

Bell, Daniel.1974. *The Coming of Post-Industrial Society- A venture in Social Forecasting*. Heinemann: London

Benkler, Yochai. 2005. *Common Wisdom: Peer Production of Educational Materials.* Center for Open and Sustainable Learning

------. 2006. *The Wealth of Networks: How Social Production Transforms Markets and Freedom.* New Haven, Conn: Yale University Press.

Bollier, David.2001a. “Can the information commons be saved? "How Intellectual Property Policies Are Eroding Democratic Culture and Some Strategies for Asserting the Public Interest" (http://www.bollier.org/pdf/besaved.pdf) Accessed May 2009.

------. 2001b. *Public Assets, Private Profits: Reclaiming the American Commons in an Age of Market Enclosure*. New America Foundation. Accessed May,2009. (http://dlc.dlib.indiana.edu/archive/00002388/01/Public_Assets,_Private_Profits.pdf)

------. 2007. “The Growth of the Commons Paradigm” Chapter 2 (pp.27-44) in *Understanding Knowledge as a Commons: From Theory to Practice*., edited by Charlotte Hess and Elinor Ostrom. MIT Press

Budapest Open Access Iniative (http://www.soros.org/openaccess/) Accessed Dec.4th.2008

Calhoun, Craig.1992.Introduction in *Habermas and the Public Sphere*, ed. Craig Calhoun. Cambridge: MIT Press

Cape Town Open Education Declaration. (http://www.capetowndeclaration.org/read-the-declaration) Accessed May 26, 2009

Castells, Manuel. 2001. *The Internet galaxy: reflections on the Internet, business, and society*. New York: Oxford University Press.

Coates, Vary. 1992. "The Future of Information Technology." ANNALS, AAPSS Vol. 522, No. 1, 45-56

Cohen, Julie. 2006. Ch. VII. Copyright, Commodification, and Culture: Locating the Public Domain in *The Future of the Public Domain.* Ed. by Lucie Guibault and P. Bernt Hugenholtz.

Cortright, J. 2001. New Growth Theory, Technology and Learning: A Practitioner's Guide, in *Reviews of Economic Development Literature and Practice*: No. 4

Creative Commons. *A shared culture video.* (http://creativecommons.org/videos/a-shared-culture/) Accessed May 20, 2009

Creative Commons Website. (http://creativecommons.org/). Accessed June 5, 2009

ccLearn.2008. Mission statement for ccLearn. (http://learn.creativecommons.org/wp-content/uploads/2008/06/public-cclearn-mission-statement-summer-2008.pdf) Accessed May 23, 2009

Dreyfus, Hubert.2001. *On the Internet: Thinking in Action.* New York: Routledge

Dyson, Esther.,George Gilder, George Keyworth and Alvin Toffler.2004. "Cyberspace and the American dream."Pp.31-43 in *The information society reader*, edited by Webster, Frank and Raimo Blom et al. London ; New York: Routledge.

Frow,John. 1996. Information as Gift and Commodity. *New Left Review,* 219, Pp. 89-108

Goldstein,Paul.1992.*Copyright.*Vol.55:No.2

Hardin, Garett.1968. *Tragedy of the Commons.* in Science, 162(1968):1243-1248. (http://dieoff.org/page95.htm) Accessed May 21, 2009

Hassan,Robert. 2003. *The chronoscopic society : globalization, time, and knowledge in the network economy.* Peter Lang: New York.

Haulsee, J. N.d. Intellectual Property in Online Education: Who "Owns" the Digital Academy?*The Journal of Online Teaching and Learning* (http://www.jhaulsee.net/writ430/documents/iplaw01.pdf) Accessed June 4, 2009

Hénaff, Marcel. Trans. Mary Baker. *Claude Lévi-Strauss and the Making of Structural Anthropology*. Minneapolis: University of Minnesota Press, 1998.

Hewlett Foundation Report. Atkins D.E., Brown J.S., Hammond A.L. 2007. A Review of the Open Educational Resources (OER) Movement: Achievements, Challenges, and New Opportunities. (http://www.oerderves.org/wp-content/uploads/2007/03/a-review-of-the- open-educational-resources-oer-movement_final.pdf) Accessed May 4, 2008

Horizon Report.2006. The New Media Consortium and the EDUCAUSE Learning initiative. (http://www.nmc.org/pdf/2006_Horizon_Report.pdf). Accessed June 3, 2009

Idris, Kamil. 2003. *Intellectual Property- A power tool for economic growth*. World Intellectual Property Organization.

Kalmus,Veronika. 2007. "Socialization in the changing learning environment: Some considerations for research." Eighth International Conference on Learning and Educational Media . (http://www.caen.iufm.fr/colloque_iartem/pdf/kalmus.pdf) Accessed November 19, 2008

King, Roger 2004 *The University in the Global Age.* Basingstoke : Palgrave Macmillan

Koman,Richard.2003. Returning Creativity to the Commons. *O'Reilly Media* (http://www.oreillynet.com/pub/a/policy/2003/01/03/cc.html) Accessed May 23, 2009

Kumar, Krishan.2004. "From Post-industrial to Post-Modern Society" Pp. 103-121 in *The information society reader*, edited by Webster, Frank and Raimo Blom et al. London New York: Routledge.

Latour, Bruno and Michel Callon. 1992. "Unscrewing the Big Leviathan or: How actors macro- structure reality and how sociologists help them to do so" in K. Knorr-Cetina and A. Cicourel eds., *Advances in Social Theory and Methodology: Toward an Integration of Micro- and Macro-Sociologies*, pp. 277-303.

Lax, Stephen,ed. 2001. *Access Denied in the Information Age*. New York: Palgrave.

Leadbeater, Charles. 2004. "Living on this air." Pp. 21-31 in *The information society reader*, edited by Webster, Frank and Raimo Blom et al. London ; New York: Routledge.

Lessig, Lawrence.2004.Free *Culture. How big media uses technology and the law to lock down culture and control creativity.*

Liu, Shuhua.2008. "Knowledge Sharing: Interactive Processes Between Organizational Knowledge-Sharing Initiative and Individuals Sharing Practice" Pp.1-17,in *Building the Knowledge Society on the Internet: Sharing and Exchanging Knowledge in Networked Environments*. Edited by E. Bolisani. Information Science Reference. Hershey: New York.

Lyotard, Jean-Francois. 1984[1979]. *The postmodern condition: a report on knowledge*. Manchester University Press

Malinowski, Bronislaw. 2004 (1922). The Essentials of the Kula. In: MgGee, John and Warms, Richard (ed). *Anthropological Theory: An Introductory History*. Pp. 157- 172. NY: McGraw-Hill.

Mansell, Robin. 2008. The life and times of the information society: a critical review. Media@LSE Fifth Anniversary Conference: Media, Communication and Humanity, September 21-23, LSE (http://eprints.lse.ac.uk/21428/1/The_life_and_times_of_the_information_society.pdf) Accessed April, 2009

Marx, Karl. 1867. *Capital*. Volume 1. New York: Penguin Books. 1976.

Masuda, Yoneji.2004. "Image of the Future Information Society." Pp.15-21 in *The information society reader*, edited by Webster, Frank and Raimo Blom et al. London; New York: Routledge.

Mauss, Marcel. 1990 [1950]. *The Gift. The Form and Reason for Exchange in Archaic Societies.* London/NY: Routledge.

Merges, Robert and Menell, Peter and Lemley, Mark.2006.*Intellectual Property in the New Technological Age.* 4th ed. Aspen Publishers.

Mueller, Milton. 2005. "Info-communism? A Critique of the Emerging Discourse on Property Rights in Information." Presented at TPRC Annual Conference, Sept.24, Alexandria,VA.

Nentwich, Michael.2001. (Re-)De-Commodification in Academic Knowledge Distribution? In:*Science Studies*, Vol. 14 (2), pp. 21-42. (http://eiop.or.at/mn/ScSt2001.pdf) Last visited May 03, 2009

OECD Report.2000. *Knowledge Management in the Learning Society.* Organization for economic co-operation and development (http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/16/d2/86.pdf) Accessed June 3, 2009

OECD Report. 2007. *Giving Knowledge for Free: The Emergence of Open Educational Resources.* Organization for economic co-operation and development (OECD) (http://www.oecd.org/dataoecd/35/7/38654317.pdf). Accessed April 28, 2009

Pfeffer, Thomas. 2006. "Open Knowledge Resources for Higher Education: Scholarly Publications, Course Materials, Academic Software." In: Mac Labhrainn, Iain, et al. (eds.) The Challenge of eCompetence in Academic Staff Development. CELT, NUI Galway (Galway), p. 1-13. (http://www.ecompetence.info/uploads/media/ch1.pdf) Accessed June 4, 2009

Raymond, Eric. 1998. " Homesteading the Noosphere" in *The Cathedral and the Bazaar Steven Levy, Hackers: Heroes of the Computer Revolution,* Dell Publishing Co., Inc., New York, NY

Robins, Kevin and Frank Webster. 2004. "The long history of the Information revolution" Pp.62-81 in *The information society reader*, edited by Webster, Frank and Raimo Blom et al. London: NewYork: Routledge.

Rohter, Larry.2006. "In Digital Age, Advancing a Flexible Copyright System." *The New York Times*, June 26.

Rus, Andrej. 2008. 'Gift vs. commodity'debate revisited. *Anthropological Notebooks* 14 (1):81-102

Sanger,Lawrence.2006. “The Future of Free Information.” *Digital Universe Journal* 1:1-10. (http://www.dufoundation.org/) Accessed May 1, 2009

Shulenburger,David.2003. *Scholarly Communications is Not Toxic Waste: Lessons Learned,* Conference paper. Max Planck Society, Harnack Haus. Berlin, October 2003

Siemens, George.2006. *Knowing Knowledge.* (www.knowingknowledge.com) Accessed June 3, 2009

Warschauer, Mark.2003.*Technology and Social Inclusion: Rethinking the Digital Divide.* MIT Press: London

Webster, F. 2002. *Theories of the information society.* London: Routledge.

Webster, Frank and Raimo Blom et al (eds). 2004. *The information society reader*. London ; New York : Routledge.

Willinsky, John. 2002. “Copyright Contradictions in Scholarly Publishing.”*First Monday*. Volum 7, Number 11 – 4. (http://www.firstmonday.org/Issues/issue7_11/willinsky/#author) Accessed December 4, 2008

------. 2006. *The Access Principle- The Case for Open Access to Research and Scholarship.* London: The MIT Press

UNESCO World Report.2005. *Towards knowledge societies.* (http://unesdoc.unesco.org/images/0014/001418/141843e.pdf) Accessed June 3, 2009