DIGITAL ENCLOSURE AND THE COMMUNICATION COMMONS REVIVAL

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ABSTRACT

This thesis considers the political and economic forces shaping the Internet as a medium of increasing importance in everyday life. The digital communications infrastructure is currently facing commercial enclosure on three layers: *physical* (regulation and ownership of the wires), *content* (copyright policies, media technology, ownership), and *space* (ownership and orientation of online tools, spaces, and services). This thesis explores and analyzes the power dynamics driving enclosure on each of these layers, while also acknowledging opportunities for a rejuvenated "communication commons".

Keywords: commons; internet; communication; media democracy; net neutrality; open source; copyright; enclosure; commercialism; digital; technology; policy

Subject Terms: Media Democracy; Intellectual Property; Media Policy; New Media and Technology; Political Economy; Open Source Software; Media Reform

DEDICATION

To all of those who struggle for a democratic communications system.

ACKNOWLEDGEMENTS

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CHAPTER 1: INTRODUCTION

> Most people aren't aware of the world of art and commerce where [...] each label, like apartheid, multiplies us by our divide and whips us 'til we conform to lesser figures. What falls between the cracks is a pile of records stacked to the heights of talents hidden from the sun. Yet the energy they put into popularizing smut makes a star of a shiny polished gun. The ballot or the bullet for Mohawk or the mullet is a choice between new times and dying days [...] The ways of middlemen proves to be just a passing trend. We need no priests to talk to God. No phone to call her [...] I think it fair that you should know that your purchase will make middlemen much poorer... (Williams, 2008, para 1)

The above excerpt comes from a note Saul Williams posted on his website after the launch of his most recent album.[1] Williams is a highly political, and also celebrated, hip hop artist and poet. While not a 'star' in the pop culture sense, Williams risked limiting his exposure by choosing to distribute his latest album through his website without the backing of a record label. To Williams, what mattered most in this case was the absence of corporate middlemen defining what his art can and cannot be. There was no mandate for this album to achieve utmost profitability. This is an increasingly common occurrence, wherein autonomous artists are able to share a cultural expression directly with their audience.

The Internet provides many such opportunities to share cultural expressions and information based on diverse sets of values and ways of being.

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[1] Saul William's album is titled, *The Inevitable Rise and Liberation of NiggyTardust* and was launched from his website (www.niggytardust.com) on November 1st 2007.

Nevertheless, commercial interests see the Internet as an opportunity to earn increased profits, while also being threatened by this manifestation of an open communication commons. Thus, there are *relations of force* acting to enclose the open Internet. To unpack the term *relations of force,* one must first note that social relationships in a given society are patterned based on a process of "mutual constitution" between individual agents, institutions, organizations, social practices, norms, values, and technologies (Mosco, 1996, p. 212). Depending on the social settings, these relationships can be hierarchal, fair, exploitive, reciprocal, intimate, distant, and a variety of other configurations. Relationships and more significantly, specific patterns of relationships create a *relational force* within the appearing social context, as well as in the wider social totality. Relations of force are therefore a form of social energy created by a specific relation, or the aggregation of patterned relations. Saul Williams selling his music directly to his fans undermines the pre-existing hierarchal relationship between musicians and record companies; therefore, record companies can be expected to exert force in order to stop this kind of activity. These forces have been at work for some time, so much so that the Internet has already ceased to be the open commons it once was.

Understanding the social dynamics shaping the Internet is increasingly vital, as media power takes on new dimensions in the shift toward an "always on" digital mediascape. This shift has brought about questions concerning not only what media people will consume, but also the digital environment they will consume it in. People, in increasing ubiquity, will have their own personal space

on the web where they can consume media, publish their own media, connect with friends and family, and use media tools for other ends. As citizens become more embroiled in these online spaces, corporations are in the process of mass digital enclosure, essentially fencing off popular sections of the web, communication infrastructures, and technologies of access.

We should be wary of how media conglomerates structure online navigation, and how this structuring affects our terrestrial relations and social forms. The expanding role of communication technologies in our lives, both socially and economically, makes it important to understand the forces shaping the flow of information on the Internet, and in digital communications in general. It is crucial that we maintain a common communications system with a public service orientation if we are to maintain and engender a participatory, collective, and democratic dialogue. As Kate Milberry notes, "the corporate-state encroachment on the Internet goes against its architecture and portends a foreclosure of the innovative and democratic potential embedded there" (Milberry, 2003, p. 98). We risk commercialising not only journalism and information, but also the very spaces citizens use to debate, discuss and connect with one another.

Allowing a *digital enclosure* to proceed will rob us of future technological innovations and the potential for a more radically decentralized communication system. When large conglomerates dominate cultural production, the very vocabulary we have available for expression is corralled. As modes of communication are multiplied, there is an amplification of the embedded social

relations that they encompass. Considering the implications of a commercialized communications system, we attempt to take an informed look at the social forces shaping these networks, and offer strategies to expand a communications commons.

This thesis is a conceptual as much as, and perhaps more than, an 'empirical' study of the development of the Internet and the possibilities for a democratic transformation. Throughout our analysis we apply Vincent Mosco's (1996) conception of "mutual constitution" to technological development as a process of "interactions among elements that are themselves in the process of formation and definition [...] the term constitution foregrounds the process of becoming with all elements of the social field" (p. 138). From this vantage point we view the Internet as shaped by its present and past technological properties as well as social forces developing out of current social relations, while noting that those technological properties are themselves "in the process of formation" (Mosco, 1996).

The bedrock of this study is a review of social theory concerning the concept of the 'commons,' as well some of the existing applications of this concept to digital communication. In reading about the commons, special attention was given to potential parallels between the terrestrial and digital enclosure. We begin our analysis in chapter 2 by examining the relations of force that propelled the enclosure of the English commons in the Middle Ages. The concept of enclosure comes from the "English Enclosure movement" starting in the Middle Ages, whereby lands, previously managed by villagers, were turned

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over to private hands. Enclosure is the process whereby that which was once held in common is transformed into a private commodity. The analysis in chapter 2 reveals many parallels between the English enclosure and the dynamics shaping the Internet today.

Acknowledging some notable elements of continuity, we outline how forces of enclosure are now partially, but potentially increasingly, shaping the Internet. In chapters 3, 4, and 5, we explore how media/telecommunications conglomerates are structuring digital media platforms and content on several layers, moving the Internet away from its relatively commons-based history. The three layers we identify are the *physical layer*, the *content layer*, and the *space layer.*[2] Each of these layers represents a site of social struggle. We first illustrate and analyze how the forces of enclosure are shaping each layer, then, in chapter 6, we outline the "commons revival" taking place on each layer, noting how the residual commons logic of the Internet is animated by new commons regimes. We also offer potential avenues for expanding our common communications infrastructure through 'networking the commons'.

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[2] Several academics have divided the Internet into "layers". Most notably, Lawrence Lessig (2001) broke the Internet in a physical layer, code layer, and content layer. While there are similarities between the two, our analysis is quite different in some respects. In particular, we detail social dynamics of online "space", whereas Lessig focuses more specifically on "code" and protocols. This is an understandable difference considering the rapid development of online space since Lessig's analysis. Another difference is that we focus much of our attention on the regimes and social forces shaping each layer, whereas Lessig's analysis is more descriptive and concerned with the layer architectures and public policy. Again, this is an understandable difference considering the impact commercial interests would have on the Internet was not as fully revealed at the time of Lessig's writing.
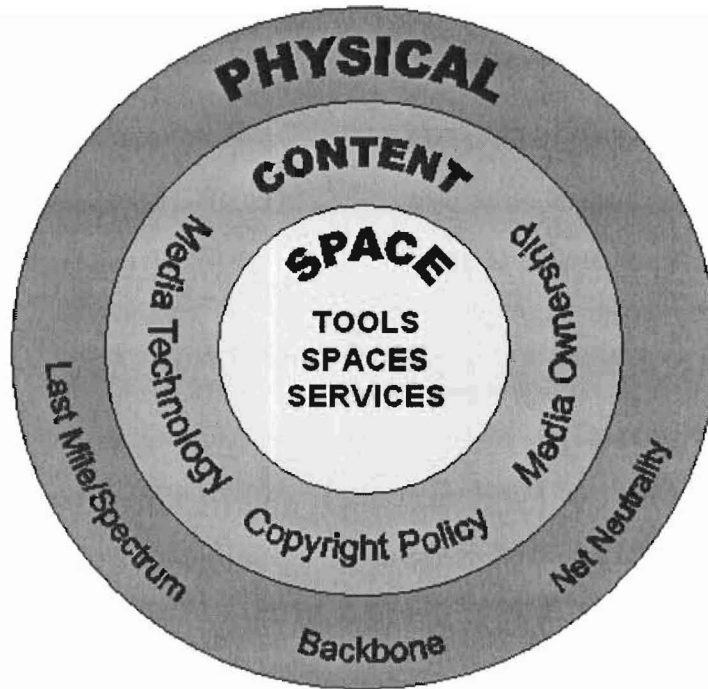
Figure 1. The Layers of the Internet

The physical layer of the Internet includes regulatory regimes that shape

the use of the physical technological infrastructure of the Internet, such as the

"backbone" and the "last mile" of wire that connects users to that Internet

backbone. Included in the last mile is wireless spectrum, which is increasingly

used to connect to the Internet through wireless devices. While a detailed

analysis of these terms will be offered in chapter 3, it is important to note at this

juncture that these concepts are conceived as systems of ownership and

governance of the *wires* and access points that make up the physical (tangible)

structure of the Internet (e.g. both regulation, in a broad sense, and physical

technology). The corporate impetus to undemocratically control access to

infrastructure of digital networks is an ever-present threat. Internet service providers (ISPs) are threatening to pull away from network neutrality ("net neutrality" for short), the guiding policy rule that preserves the free, open, and non-discriminatory Internet. Net neutrality is a principle based on past telecommunication policy rules called "common carriage". Common carriage rules stipulate that telecommunication networks provide access to communication infrastructure on a neutral basis. Applied to the Internet, common carriage (net neutrality) mandates that ISPs provide a neutral network for people and organizations to publish media and communicate. If ISPs defy net neutrality, we could end up with a much more centralized communications network. That said, net neutrality is not a panacea for concentrated telecommunication power. Even with regulations in place, a small number of large telecommunication corporations still own the vast majority of Internet service provision facilities. Taking back the digital commons will mean creating a plurality of ISP ownership types with municipal and community/non-profit ISPs as pillars.

In chapter 4 we discuss the content layer of the Internet. The content layer of the Internet includes copyright policies, media content technology architectures and the political economy of media content. We focus our analysis on the forces shaping the production, circulation, and reception of culture in relation to the Internet. With its decentralized architecture, the Internet affects relations of cultural production, and has important implications (enabling and disabling properties) for the Internet as a whole. It is within this layer that corporations are pushing hard for strict intellectual property rights in national and

international policy arenas. These property rights regimes restrict citizens' abilities to share and produce non-commodity based media. Through technological means as well as public policy, media corporations are in the process of closing down the very technologies used to share cultural productions. However, there are forces from below rallying against the cultural enclosure. One such force is the Creative Commons license system, which facilitates sharing and building upon creative works. Also pushing back on enclosure are media sharing technologies, and the continued prevalent practice of sharing cultural works.

In chapter 5 we look at the forces of enclosure shaping the space layer. The space layer includes online tools (web software applications), spaces (social networking sites, portals), and services (news delivery, information services). Of the three, this layer is the most dynamic and exciting, as it is in an almost constant state of flux. Key elements of enclosure on the space layer include commercialization, ownership concentration, and governance. On the space layer, digital enclosure is deepening the commodification of online communication and practices. Major web companies are finding new and evermore invasive ways to sell our attention to advertisers and marketers. The companies that are most successful in this drive for audience ('participant') labour use their extracted profits to buy up more web properties and turn them into part of their commodification machinery. Major online property holders such as Google and Facebook, now have the power, and increasingly the incentive, to

gear their media holdings towards the efficient delivery of online users ('participants') to marketers and advertisers.

Using Dallas Smythe's concept of the "audience commodity" and an analysis of the English enclosure movement, this chapter develops the concept of the 'participant commodity'. Smythe's conception of the audience commodity brought attention to the media industry's function to produce and circulate audiences to be consumed by advertisers. In Smythe's view the "purpose of the mass media is to produce audiences to sell to the advertisers," and because "audience power is produced, sold, purchased and consumed, it commands a price and is a commodity" (Smythe, 1981, p. 233). Taking Smythe's conception of audience commodity and applying it to online media reveals that the production of "participant commodities" is shaping this new media system much the same as prior mediums have been shaped by the drive to produce audience commodities. Producing and selling online participant labour has become a key driver of online media, shaping social relations, agency, and personal communication in profound ways.

This drive towards ever-increasing exploitation of online participant labour is leading to the development of what I call 'synergistic membranes'. As discussed in chapter 5, the control of dominant web spaces, tools and services is held by a small number of powerful new media corporations. The synergistic membrane describes the phenomenon where online media behemoths develop vast bonded constellations of online spaces and tools, and thus create semi-permeable membranes that restrict traffic to the greater cyberspace. New media

firms create this semi-permeable membrane by promoting their own web properties over others, and systematically excluding access to rival spaces and services. As new media conglomerates fortify their media empires, reducing cyberspace inter-permeability, it is important we come to grips with this new media milieu, and develop effective interventions. Much like the other layers of digital communication, the commodification of online space faces resistance; in this case it comes in the form of non-commercial, open-source projects, some of which have been profoundly successful (Wikipedia and Firefox for example).

To explore the power dynamics shaping digital media, this multi-method study includes a review of appropriate theoretical literature, interviews, and a review of applicable popular press accounts. While this study is far from exhaustive, considering the size and complexity of the subject matter, it does provide a high-level and holistic view of the social forces shaping the Internet, providing useful insights for further, and more specific, research.

This study includes ten semi-structured interviews, conducted between September 2007 and March 2008, with activists and professionals working to expand digital commons regimes in various ways. The interviews are used for our exploration and analysis of the communication commons rival in chapter 6. Special attention was paid to how or whether the interviewees' work fit into a larger struggle against enclosure. The study explored the strategies and details of different fronts in the struggle to preserve and expand the communication commons. Several of the study respondents are involved in media reform, which could encompass activity focused on any, and potentially all three layers of the

Internet we investigate. Other respondents were specifically involved in expanding the communication commons in one of the three layers of the Internet. Before conducting this study, it became clear that some of the information we wished to obtain would threaten our respondents' employment or social standing. To free the respondents of potential reprisals from their place of work, or social group, we provide them with full confidentiality limited only by the laws of British Columbia and Canada.

Beyond exploring the underlying dynamics of the open-source software and open-access/copyright reform movements and organizations, the purpose of these interviews was to understand the ways in which a number of representative groups work with other similarly focused organizations. More specifically, the study aims to uncover the linkages between the open-source software and open-access/copyright reform with other adjacent and non-adjacent movements (media reform, independent/community media, public space). The study is not an exhaustive investigation of communication commons regimes, the open-source movement, or media reform; rather it is an exploratory sample of the communication commons milieu.

To complement the interviews, the study also includes a review of popular press coverage, press releases, blog posts, and background information in the "about us" section of the websites for the enterprises investigated. The objective in studying organizational literature and popular press research was to provide additional context for the rest of the study. The main goal of this exploratory

endeavour is to shed light on this new, powerful, and rapidly unfolding digital media system.

While the text often refers to and acknowledges the wider "social totality" that interacts with digital media, I focus on the relations of force shaping digital communications rather than vice versa. The role of digital communications in neo-liberal capitalism is an important topic that merits additional and ongoing research, building on work by Schiller (2007), Mosco (2004), and Benkler (2006).

This study approaches the Internet from a North American context. Most of our attention is directed towards policy and social forces in the United States, as these are the most fundamental to the structure of the Internet. While other countries have played an important role in the development of the Internet, the U.S. led the way in the early years of the Internet, as well as in its expansion and commercialization. International policies that regulate media content delivery are often initiated, and sometimes enforced, by the U.S. For example, Canada has been pressured by the United States to bring its copyright law into conformity with WIPO (World Intellectual Property Organization) Treaties (Tawfik, 2005, p. 79). Furthermore, most of the largest media corporations in the world, including the corporations that dominate the Internet, are located in the United States (Bagdikian, 2004). We do on occasion draw on policy and occurrences taking place in Canada and other parts of the world when they illuminate the issue at hand, but we do not detail them consistently.

This study also avoids detailing the role of digital communications in relation to globalization, and the role of globalization on digital communications.

Globalization is an important element of intellectual property right regimes, online media, content ownership, and much else affecting the configuration of digital communication, and it is acknowledged as such in this text. Globalization is referred to where appropriate, but we do not attempt a full treatment of this topic.

The objective of this thesis is to explore how social forces are shaping the Internet, and describing the current trajectory of the media and telecommunications. By looking at the different iterations of enclosure we can better understand how the relations of force shape the social environment, and how best to resist them. Building a dominant public-benefit communication system requires finding leverage for existing online commons regimes, as well as building new and sustainable regimes. By investigating the different relations of force at play within digital media, this text aims to provide some insight into the organizational forms and connections that can lead to a commons rejuvenation both online and off.

CHAPTER 2: FROM TERRESTRIAL ENCLOSURE TO DIGITAL ENCLOSURE

With the expanding ubiquity of networked digital communications we stand today at a unique juncture, and it is important we understand its *historical specificity*. It is also important for us to look to the present with an understanding of the social forces and historical instances that have brought us to this point: to understand the contemporary forces shaping society, we must recognize the trajectory of society and the relations of force that propelled that historical path. After all, the drive to competitive production, capital accumulation, and commodity relations are living forces, in perhaps nuanced permutations, which interact with our current social totality. With this in mind, before investigating the unfolding digital communications system, we look at the English enclosure of the terrestrial commons beginning in the Middle Ages.

Defining The Commons

Many who write about the public benefit web have invoked the concept of the "commons", but rarely is it adequately defined. It is often invoked as a vague notion of collective ownership and public benefit spaces, tools, technologies, and institutions. Since we will be calling upon this concept repeatedly, we will give it a more precise definition. The basic characteristics of a commons regime (as opposed to a commodity property regime like a for-profit corporation) include:

- Assets "that are protected by a liability rule rather than a property rule" (Lessig, 2002, 181);
- A community where meaning is "derived from participation and is not a tradable commodity" (Shiva 1994, as cited in Kidd, 1998, p. 55);
- Governance provided by the political, economic, social, and cultural relations of the community (Kidd, 1998);
- Social relations revolving around reciprocal obligation and customary use-rights, rather than ownership;
- A culture based on shared usage, self-sufficiency and self-governance, mutual aid, patterns of moral reciprocity and fair distribution of benefits; and,
- An underlying logic that is shaped by a community or public service ethic;

Taking from the above characteristics, a commons regime is a governing social form (space, culture, technology) consisting of a cooperative ethos (shared usage, mutual aid, moral reciprocity, self-governance, fair distribution of benefits), a community/public service ethic, the appreciation of community assets held in common, and decentralized participatory governance, with prestige and distinction derived from contributions to the community. Put more concisely, a commons regime is operated towards community-defined goals, cooperatively managed, collectively owned by its members, and places high value on social equality and social production.

These characteristics create a kind of logic that permeates and flows from commons regimes, and helps configure and reinforce the values, practices and social relations of the commons; it constructs and maintains a commons culture. Forms of governance in particular seem to be a key identifier of commons

regimes. Building from Elinor Ostrom (1990), Kitty van Vuuren describes

commons management as being "ultimately about the self-governance of people

who have voluntarily committed themselves to cooperative strategies, and

concerns the rights associated with the use of a particular resource, and the

duties to ensure its sustained use" (Vuuren, 2006, p. 385-386). Examples of

commons regimes include co-operatives, community gardens, open-source

software development communities and other open online communities,

community development financial institutions, and theoretically, government (as

well as their institutions and agencies). On government resources as commons,

Lawrence Lessig, says,

> public streets are a commons: on no one's schedule but your own,
> you enter the public streets, and go any direction you wish. You can
> turn off of Broadway on to Fifty-second Street at any time, without a
> certificate or authorization from the government. (Lessig, 2002, p.
> 181)

Another example of a commons regime is a community garden, described as,

> centers of community activity that foster a different set of values
> that are especially important to the younger members of the
> community: cooperation, learning how to nurture natural processes,
> acquiring the knowledge and skills that can be used to achieve
> greater self-sufficiency... (Browers, 2006, p. 53)

There is further discussion of the different forms commons regimes can take in

the section below titled "Plotting Regimes in Social Space".

The dedication to fair and equal distribution of benefits in commons

regimes means that they undermine the concentration of symbolic, economic,

social and cultural capital found in commodity relations. Rather than

concentrating access to the means of communication in powerful people and

institutions, commons regimes level the playing field. This *horizontalness* is complicated by the unequal amounts of different forms of capital that participants in the commons bring with them from broader social contexts. That said, commons regimes do provide a space that permits and promotes a more decentralized allocation of capital, while also being more conducive to radical cultural politics than structures with more embedded commodity relations and centralized capital. Expanding the size, number, and vitality of commons regimes could alter the power relations of other regimes and redefine social, cultural, and symbolic capital, while decentralizing economic capital.

Commons regimes configure agents' social subjectivity in favour of commons ethos, values and relations, just as commodity property regimes (corporations) configure and structure our subjectivity to conform to commodity relations and values. Thus, if we can expand the commons field by expanding existing commons regimes and erecting new regimes, then we will, by proxy, expand and embed a commons logic into other fields through agents. This expansion of the commons engenders a 'cycle of commonization': commonization is a process of reciprocal relational force that transfers enclosed space into commons space – moving property from concentrated private holdings, to the common, as detailed in the following figure:
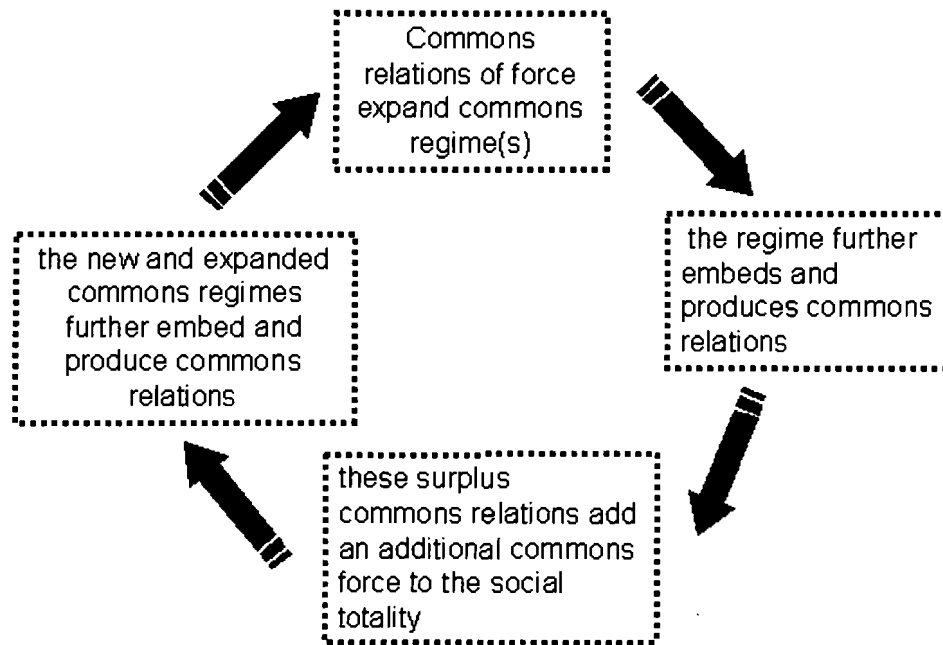
Figure 2. The Cycle of Commonization

Through commonization, commons-based dispositions can be deepened and hardened as agents have continuous dealings with the regularities of commons regimes (Bourdieu, 1988). It is with this understanding of the commons and their ability to shape our social world that we consider the relations of force pressuring our digital commons.

The Terrestrial Enclosure

Commons regimes bleed social relations to the social totality, and alter other spheres. However, it is also true that outside regimes, relations, and technologies can alter the commons. To understand the digital commons and the forces of enclosure that endanger it, we must first understand the Terrestrial Enclosure. The territorial enclosure is most commonly associated with an

episode in English history (the "English Enclosure") where the village commons were transformed into commercial estates (Dyer-Witheford, 2001). Prior to the thirteenth century, many villages in England operated as commons regimes, with villages relying on shared usage of grazing lands and wastes, reciprocity, mutual aid, and community development (Dyer-Witheford, 2001; Thompson, 2001a). For example, open access to collectively-owned waste land provided access to shared materials as well as to the means of exchange with other commoners, making users "part of a network of exchange from which mutuality grew" (Neeson, 1993, p. 159).

The enclosure was and continues as a process by which land held in common by the villagers (the commons) is transformed into land predominantly owned by feudal lords, and later, gentry. This process not only transferred ownership from land collectively owned and managed to land owned as a private commodity, it also transformed villagers into labourers. Enclosure leads to the exclusion of commoners from the land that once provided sustenance, thereby creating "disposable" people and surplus labour (Shiva, 2005). As Marx wrote, "new freedmen became sellers of themselves only after they had been robbed of all their own means of production, and of all the guarantees of existence afforded by the old feudal arrangements" (Marx, 1868, p. 669).

By most accounts, the first permutation of enclosure began in the late Middle Ages and was well under way by the sixteenth century, with 45 to 50 percent of the agricultural land enclosed (Cobb, 2003). The English enclosure was a complex phenomenon that was the result of multifarious patterns of

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political, institutional, and legal processes (Wood, 2001). At its very root, enclosure was not just about capital accumulation, property law, and profit-maximization, but also about the "transformation in the most basic human relations and practices, a rupture in age-old patterns of human interaction with nature" (Wood, 2002, p. 95; Boyle, 2003). One of the key social relations that propelled the terrestrial enclosure movement was that villagers, even prior to the sixteenth century, were not so much villagers, but tenants paying rent (Wood, 2002, p. 95). Prior to enclosure, productive social relations in the feudal system among lords and peasants revolved around reciprocal obligation rather than ownership (Thompson, 2001b). However, many landlords lacked extra-economic means of coercion so they depended on, and thus encouraged their tenants' successful competitive production – thereby increasing production via competition, rather than through the threat of physical violence (Wood, 2002). The tenants who were the most productive could pay higher rents and were rewarded with more land to work, whereas those who were less productive sometimes lost access to their land altogether (Neeson, 1993). This created a system of *competitive rent,* which allowed landlords to "lease land to the highest bidder, at whatever rent the market would bear" (Wood, 2002, p. 95).

Under this competitive rent system, landlords could appropriate surplus labour, and thus accumulate capital through rent fees. The competitive rent system effectively freed villagers from their masters, but it also freed them of the land they needed for subsistence. The competitive rent system fundamentally altered villagers' social relations amongst themselves, as they were now

competing to out-produce each other, thereby removing some of the prior incentives for cooperation and sharing. Villagers lost a level of "connection, sympathy, and obligation...the value of the commons was their social cement" (Neeson, 1993, p. 46). As Ellan Meikins Wood concisely puts it, "for the first time in history there developed a mode of exploitation that systematically impelled the development of productive forces" (Wood, 2002, p. 142).

From the fourteenth to sixteenth century, under a tenure system, individuals were allowed to acquire small plots of land along open fields. These smallholdings were among the first to be fenced off – in part so that landlords could profit off the growing wool industry (Kidd, 1998). Use-rights and the commons ethic were also strained by demographic pressures as, "the growth of towns and with this, the growing demand for fuel and building materials enhanced the marketable value of such assets as quarries, gravel-and sand-pits, peat bogs, for the larger land holders and lords of the manor" (Thompson, 2001a, p.106). Villager ownership was "replaced by large estates owned by absentee lords who leased the land to tenant farmers (who then hired local wage labour to work the fields)" (Gutstein, 1999, p. 137). During the latter part of the eighteenth century, landlords enclosed common lands that were used by communities through customary use-rights (Dyer-Witheford, 2001; Thompson, 2001a).

The enclosure did not begin due to a change in parliamentary property law but rather via a more complex process. This process was fuelled by a 'confluence of force', much of it occurring before private property laws were enacted. A confluence of force is the coalesced social energies from more than

one layer or domain, which creates a conjoined, symbiotic, and multiplied level of force. Private property laws were a part of the confluence of force that enclosed the English commons, maybe a significant tool of the forces of enclosure, a powerful enabler of enclosures, but certainly not the cause of the process itself. As late as the sixteenth century, laws were passed pushing against the enclosure (Cobb, 2003). Parliamentary enclosure was not public policy until the middle of the eighteenth century (Neeson, 1993, p. 7). The policy shift occurred in part because the gentry, newly empowered from increased rents, were persuasive critics of the commons (Cobb, 2003; Neeson, 1993). In addition to increases in commodity prices during this period, land rents rose by 600 to 1000 percent from 1540 to 1640 (Goldstone, 1991, p. 97, as, as cited in Cobb, 2003). The new generation of gentry were much more aggressive advocates for enclosure, in part due to a change in gentry culture from the "entire medieval-romantic value system, which was based on chivalry, heroism, honor and public display, to a new value system that treated acquisitiveness, thriftiness, and careful management as a religious calling" (Cobb, 2003, p. 4). While "Enclosure Acts" passed by Parliament are not implicated in the beginnings of the enclosure, they did further and accelerate the enclosure. In studying some of the enclosures between 1780 and 1815, J.M. Neeson (1993) found that enclosure Acts accelerated the differentiation of the peasantry (fewer tenants, more large landlords), and two-thirds of the peasants in one of his studies lost 20 percent or more of their land within five years of enclosure legislation (p. 252).

As the above demonstrates, enclosure was pushed symbiotically by property law, market forces, and most importantly (and perhaps made possible by), changing social relations between landlords and villagers. These forces combined "disrupted traditional social relationships and perhaps even the view of the self or the relationship to human beings to the environment" (Boyle, 2003, p. 35). Nick Dyer-Witheford sums up the effects of the enclosure:

> Villagers lost access to grazing, fishing, hunting, quarrying, fuel, building materials, and rights of way. An entire culture based on shared usage was annihilated and replaced by a new economy in which landlords developed estates as capitalist enterprises, selling the outputs as commodities. (Dyer-Witheford, 2001, p. 130)

Taking from the analysis detailed above, enclosure can be defined as the process whereby that which was once held in common is transformed into a private commodity. Whether we are looking at the social relations, or the tangible physical resources – enclosure transfers both into the commodity form. Relations move from that of commoners, to buyer and seller, or tenant and landlord; resources move from those held in common, to commodities privately owned and traded based on private economic returns. Enclosures create and are symbiotically pushed by 'commodity property regimes': a governing social form that uses inscribed power relations to extract profits through rents[3], and/or commodity production. In the English enclosure, the lords and gentry operated

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[3] By rent we mean capital (money), or labour extracted through an asymmetrical exploitive relationship, allowing compensation in excess of the cost of production/maintenance. During English enclosure tenants paid rent so that they could have access to land. While this kind of rent extraction continues, other forms have been developed, including commercial rent extraction – when commercial entities charge punitively high prices for a commodity it has privileged access to (such as owning the physical wires used for the Internet).

their land as commodity property regimes. In modern times, the most powerful commodity property regime is the for-profit public corporation.

The process of enclosure is an ongoing one: forces of enclosure and commons forces are in constant, although often unequal, struggle, mutating and transforming to address the present contested zone. The process has widened geographically to new spaces, while also deepening, turning commons relations and culture into the commodity form. The expanding process unfolds in a 'cycle of enclosure': a social process where the profits derived from commercial appropriations is transferred into efforts to make further appropriations. The returns derived through rent extraction are used (policy lobbying, purchasing property) to facilitate and increase the velocity of enclosure.

Relations of force
enclose a
commons space

the space is used
to develop profits
through rent
extraction

increased profits
are derived from
increased market
control

capital is invested in
the means of
reproducing, and
expanding the
enclosure
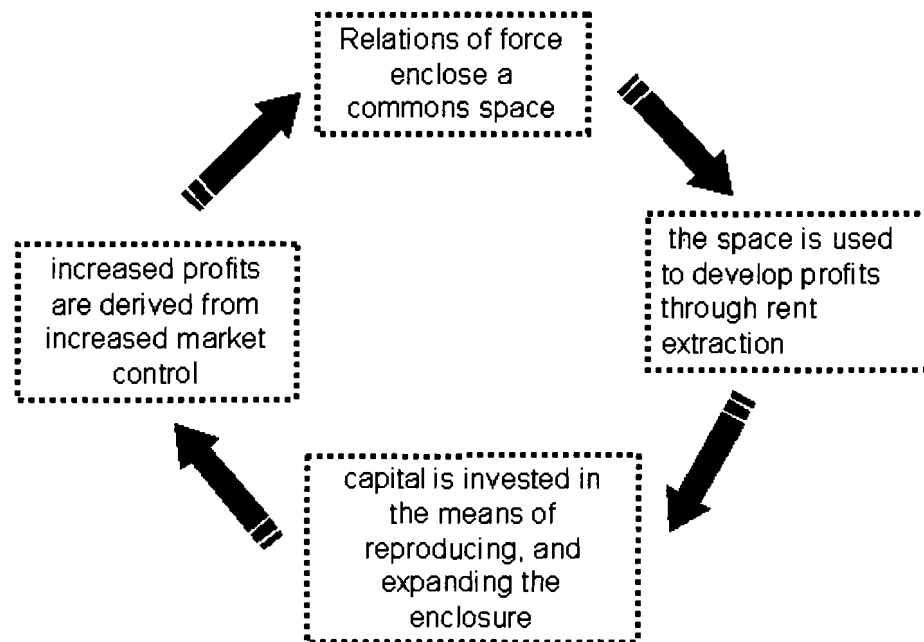
Figure 3. The Cycle of Enclosure

The widening of the enclosure is expressed globally in the form of colonization and imperialism. According to Minoti Chakravaryt-Kaul, after India became a colony of Britain, in the nineteenth and twentieth centuries, the colonial state "initiated the decline in the American colonies, the enclosure of indigenous peoples' resources" (Shiva, 2005). Forces of enclosure have also moved beyond the terrestrial space into radio spectrum. Dorothy Kidd notes that state and corporate radio users quickly

> ...realized that radio could effectively be used for the extension of management over the labour of audiences, particularly women, for the interests and profit accumulation of advertisers. By the beginning of the 1930s, U.S. radio's possibilities had been narrowly defined by capitalist industry, and the radio space was enclosed. (Kidd, 1998, 214)

These few examples illustrate just part of the widening and deepening process of enclosure. At present, forces of enclosure are almost ubiquitous on all the vestiges of the commons. As Vandana Shiva points out, the "first enclosures stole only land, today all aspects of life are being enclosed—knowledge, culture, water, biodiversity, and public service such as health and education" (Shiva, 2005, p. 3). With this multi-directional enclosure in mind, we will soon look at a crucial new commons regime under threat: the Internet.

Plotting Regimes in Social Space

Regimes can be separated into three broad categories: *autonomous regimes, semi-autonomous regimes* and *state regimes*. Autonomous regimes are organizations, institutions, or collectives that are largely independent of government institutions. While autonomous regimes may have relations with the

state, they do not rely on public institutions for sustenance. Examples of autonomous regimes range from corporations to community gardens. Semi-autonomous regimes include public institutions that are not directly part of the state, such as public universities, public broadcasters, libraries and other organizations supported primarily by the state. State regimes include government organizations and agencies, such as the U.S. Department of Defence, or Heritage Canada.
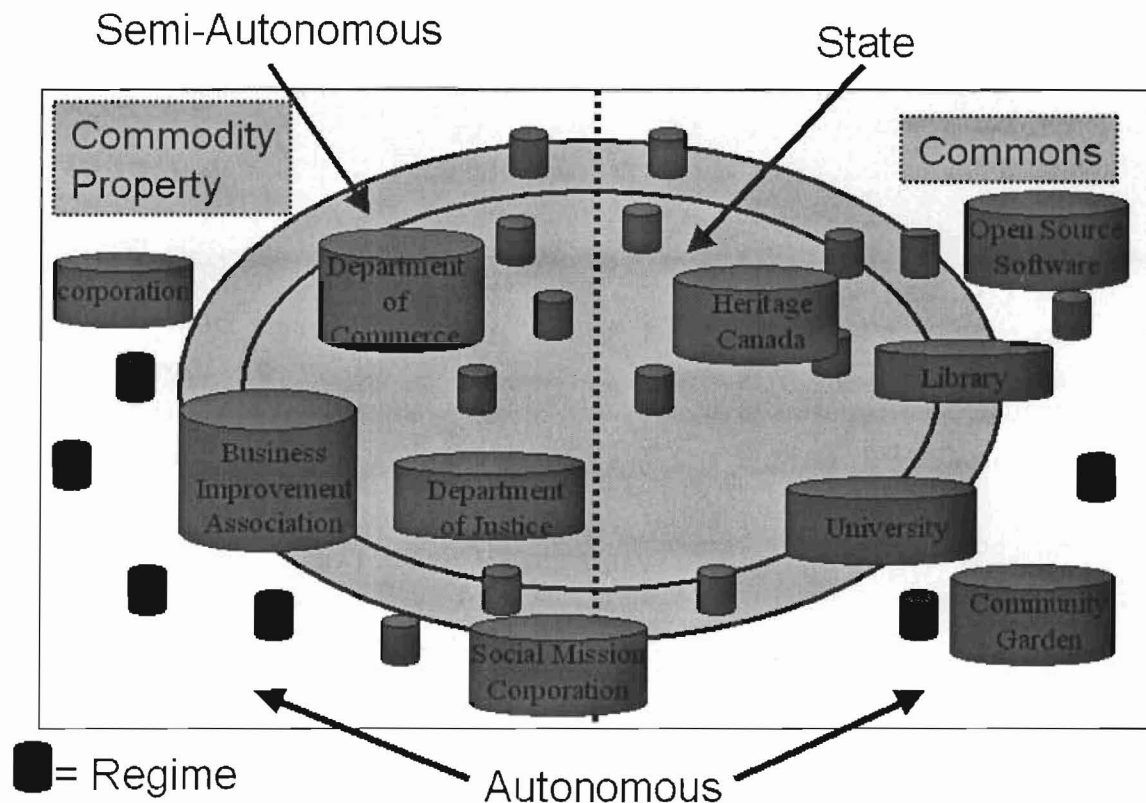
Figure 4. Plotting Regimes in Social Space

Regimes can also be divided into commons regimes and commodity property regimes, as defined above. As figure 2 shows, regimes can be plotted

as any combination of commons or commodity property regimes, as well as autonomous, semi-autonomous and state regimes. For example, we would plot a public universities or libraries as semi-autonomous commons regimes, because they have commons characteristics, and are semi-autonomous relative to the state. State institutions are themselves plotted as commons if they embody the commons characteristics described earlier. The state can also be an agent of enclosure, as demonstrated by such organizations as the United States Department of Commerce, which has a mandate to support commercial development and markets. The state is a site of social struggle; agents and social forces compete to shape its orientation. This view of the state as an underdetermined space, is what Robert Hackett and William Carroll call the "Janus-face of the state" (Hackett & Carroll, 2006, p. 27). Hackett and Carroll note that while the state can act as a public trustee, the state has also "justifiably earned suspicion for its historical role in repressing progressive forces and subaltern groups" (Ibid). By plotting regimes as we have above, we do not mean to suggest that commodity property regimes and commons regimes are mutually exclusive. Rather, any given social space is in a constant dialogue between both the logic of the commons and the forces of enclosure.

Tragedy of the Commons, or Tragedy of Enclosure

Since many of those who champion privatization (enclosure) of public resources claim the process is necessary in order to avoid a "Tragedy of the Commons", we will briefly discuss the concept here. The "Tragedy of the Commons" is a phase coined by ecologist Garrett Hardin, and is used to describe

what he viewed as the tendency for humans to over-exploit common resources, thereby limiting the ability of other community members to have equal access to that resource. The basic idea behind this concept is that it is rational for humans to overuse a common resource since the over user ("over grazer") receives personal benefit, while the cost (depleted resource), is shared by the entire community (Hardin, 1968). According to Hardin, there is not enough incentive to limit the use of common resources, and therefore, overexploitation and depletion inevitably occurs. This reality creates a situation where "each man is locked into a system that compels him to increase his herd without limit - in a world that is limited" (Hardin, 1968, para 26). Hardin uses the metaphor of an overgrazed community pasture to describe the tragedy of the commons, but also applies his theory to modern commons regimes like public parks.

While Hardin's theory is widely cited by policy makers and free-market economists, others have provided empirical evidence that challenges the basic assumptions of the tragedy of the commons. Elinor Ostrom presents cases of successful commons from all over the world, some spanning centuries (Ostrom, 1990). In her study of commons regimes, Ostrom found that commoners devise a variety of formal and informal rules and norms to sanction actions that are against the common interest of the community (Ostrom, 1999). As David Bollier succinctly puts it, "a real commons has a 'social infrastructure' of cultural institutions, rules, and traditions, and the resources are restricted to personal (non-market) uses by members of the community" (Bollier, 2002, para 17). Hardin failed to realize that in a commons regime, grazing patterns and other

activities that affect the community are decided democratically, not individually (Shiva, 2005). The tragedy of the commons is a misnomer because, if an individual over-exploits a common resource based on self-interest, that is privatization, that is enclosure, and that is quite the opposite of a commons regime. The tragedy of the commons is the tragedy of enclosure.

The Internet as a Commons

As noted earlier, a commons is any space (physical, cultural, cyber-spatial) that is operated towards community-defined goals, cooperatively managed, collectively owned, and places high value on social equality and social production. The Internet certainly began and for a period of time progressed with a commons ethic, and to a certain degree, commons-based customs and rules. Although the U.S. military provided funds for the precursor to the Internet, the technology resided in the public domain, and the right to use the Internet was freely available for those who could access it (Schiller, 1999). To be sure, the Internet was only practically accessible to researchers at universities, government agencies, as well as contractors, and later only the most technologically astute citizen; nevertheless, the Internet was a public good. open for use by those who could access it. The physical Internet backbone and regional networks to which it connected, were built with billions of dollars from state, university and federal sources (Daggett, 2007, p. 3). In the 1980s, the National Science Foundation further expanded the backbone of the Internet by offering high-capacity circuits to carry data to five universities, and later permitting other universities to connect to the network as well (Schiller, 1999, p.

10). While the telephone lines that made up much of the initial physical backbone network were private property, they were regulated as open "common carriers" of information (Levine, 2002).

On the online space layer, the Internet's core protocols and software, TCP/IP and HTML, are openly available and thus "provide a common framework owned by no one" (Boyle, 2003, p. 30). According to Nick Dyer-Witheford:

> The programming that drove the explosion of the early computer industry and the development of the Net was in effect open source-produced by government–funded agencies according to shared standards, and circulated noncommercially within an academic ethos of open information sharing. (Dyer-Witheford, 2002, p. 144)

"Mosaic", the first widely popular Internet browser, was a free program developed by a graduate student, and was widely credited with accelerating the growth of the web (Mowery & Simcoe, 2002). In fact, the vast medium we know as the Internet was created largely as the result of unpaid academic and graduate student labour, on the basis of open usage and cooperative self-organization (Witheford, 1996).

At the content layer, the Internet was also developed as a commons. Most web pages, email messages, bulletin boards and other online space, contained free material that could be forwarded or copied. Neeson (1993) explained how working in villages "wastes" in the English commons before enclosure encouraged cooperation and other commons practices and values. It is reasonable to infer that using the cyber commons in its purest form also encouraged and engrained commons practices (sharing, cooperation, participatory democracy) as well as a commons culture. Regularly engaging with

a commons regime can shape subjectivities, and if on a wide enough scale, perhaps even prefigure a social and cultural transformation away from commodity property relations. As we will see later, the commons culture that resurfaced via the Internet remains an important social force.

Digital Enclosure and Cyber Enclosure

While the commons ethic that created the Internet is still alive, it has received a major assault from commercial interests. As Daniel Schiller notes, "between the mid-1950s and 1970, business users elaborated a policy agenda around a general objective: freedom to develop corporate network systems and services as they preferred" (Schiller,1999, p. 4). The big business policy agenda sought to free publicly developed digital networks from historical commitments to universal service (Schiller,1999). Nick Dyer-Witheford marks one of the key moments as the 1992 National Information Infrastructure initiative that confirmed the extension of state subsidized privately-owned Internet (Dyer-Witheford, 2002) Other key decisions include the switch to the commercial sale of domain names, and the privatization of the Internet backbone (Mowery & Simcoe, 2002; Schiller, 1999).

The physical Internet is currently under attack by large telecommunications corporations that want to remove the "common carrier", non-discrimination basis the Internet runs on. These corporations essentially want to further assert themselves as gatekeepers of Internet traffic (SaveTheInternet.com, 2007). Intellectual property right regimes also threaten the open flow of information online. When copyright law becomes as punitive as

it is today (described in chapter 4), it limits citizens' ability to share content.

Locking down cultural artefacts as exclusive commodity property also limits the

culture commons that citizens can access, remix and reproduce.

Dyer-Witheford notes another side of the attack often left unexamined --

the power of major web property holders, particularly search engines (and now

participatory media tools and spaces), to direct online traffic to "sites of

subsidiaries, corporate allies, and paying clients" (Dyer-Witheford, 2002, p. 133).

The advance of commercial interests to appropriate the cyber commons amounts

to a different realm of enclosure that could be called "cyber enclosure". Many

academics and commentators refer to a "digital enclosure" but they are usually

specifically referring to intellectual property policies that are highly reminiscent of

the property rights that helped further the terrestrial enclosure movement.

Focusing on policy assumes that property rights are the driver of, and also the

main realm of, enclosure. Much like the original enclosure taking place during the

late middle ages in England, this new phase is a multifaceted process shaped by

resistance, institutions, technologies, and social relations. Although the terrestrial

enclosure involved the development and enforcement of property rights, one of

the core driving forces was the change in social relations amongst "commoners"

and landlords.

Similar to pre-enclosure feudal lords who allowed land to be operated as

village commons, the U.S. Military (and later the National Science Foundation)

allowed the early Internet to operate according to a mutually constituted

commons ethic. One of the key moments in the process of digital enclosure was

in 1995, when Netscape had its initial public offering with plans to commercialize a version of the Mosaic browser (Mowery & Simcoe, 2002). As proprietary software and online spaces/websites blossomed on the Internet, online social relations altered. Instead of developing through a collaborative process, much of the architecture of the Internet was being decided by corporations and market forces (McChesney, 1999; Hackett, 2006).

Ironically, the growth of participatory media also centralized the ownership of web spaces and tools by enclosing them into commercialized spaces. Participatory online spaces, once relatively free of commercialism, are now fully implicated in what has become a corporate marketing machine. The commercial Internet helps new media corporations generate huge revenues (Google generated $16,593,986,000 in revenue in 2007) thus reproducing and further entrenching cyber-enclosure (Google, 2008).

We are seeing increased demand for online services and spaces from participants, and with that demand, weakening relational power against the holders of these services. At the same time, marketers and advertisers are valuing online spaces much more than in the past. These two forces are enabling and encouraging new media conglomerates enclose their spaces and services. The situation is not unlike when terrestrial landlords were driven to further enclose village commons by both market demand for resources and increased labour competition. The cyber-enclosure, if permitted to continue, could also result in the loss of a form of social life, one involving the practice of sharing information, ideas, and culture through distributed networks. The eviscerated

Internet expands at the expense of the cyber-commons. As large corporations increasingly dominate cyberspace, we now have what Robero Verzola calls "Cyberlords". Verzola describes cyberlords as the rent-seeking propertied class of the information sector who "control either a body of information, or the material infrastructure for creating, distributing or using information" (Verzola, 2000, p. 2). Verzola gets the overall trend right, but like most other scholars, he misses a crucial and evermore powerful category of cyberlord: the owners of online media, including search engines, social web tools, social networking websites, and generally popular websites. Through these assets, online media holders are able to shape the structure the very content of the Internet, the way we interact, and the online practices we employ.

The process of turning common assets into private property, such as the digital enclosure briefly introduced above, is what David Harvey calls "accumulation by dispossession" (Harvey, 2004). According to David Harvey, this process of capital accumulation can include

> conversion of various forms of property rights (common, collective, state, etc.) into exclusive private property rights; suppression of rights to the commons; commodification of labor power and the suppression of alternative (indigenous) forms of production and consumption. (Harvey, 2004, 73)

Harvey calls these methods of enclosure "accumulation by dispossession," because the accumulation comes only at the expense of people or alternative social systems (Harvey, 2004, p. 73). Harvey is referring to dispossession in terms of terrestrial enclosure, but we can certainly apply the term to the digital enclosure.

Rather quickly, citizens have been dispossessed of the commons-based accord to openly communicate unmolested by commercial interests. As late as the early 1990s, there was an online commons-based custom, and policy rule, to keep the Internet free of commercialization. Since then, we have been dispossessed of these accords and customs as, for example, corporate activated web cookies "construct a regime of commercial panopticism, monitoring cyberspacial activity" (Dyer-Witheford, 2002, p. 133). Even if we only visit one commercial website, the media companies have the ability to appropriate our personal information through "cookies" and other technological devices (Lessig, 2006). Just as the original commoners lost access to common lands for grazing and other use-rights, Internet participants have, more or less, lost the ability to engage in commercial-free unmonitored cyber-travels.

It is within the realm of possibility for citizens to use the Internet in its commons form, using the islands of commons left, employing open source software, and anti-surveillance armour (encryption, IP masking). However, with the restrictions and required labour expenditure, exclusively using the cyber-commons web is not within the realm of high probability. As these online commercial services become evermore elementary to daily social life, commons communication could become further marginalized. In cyberspace, as in society at large, habituation and co-optation are powerful enough to reproduce our dispossession (Harvey, 1989). The enclosure of our Internet continues unabated unless online commons-based communication assets are expanded and multiplied, which is a prospect for which I remain optimistic. As Nick Dyer-

Witheford notes, cyber enclosure is "encountering resistances and alternatives—lines of fight and flight. Some arise from the commons traditions of the Net's early academic/anarchic phase" (Dyer-Witheford, 2002, p. 135).

As we will see later, resistance to the digital enclosure is both popular and dynamic. However, we will also see that on each layer of our mediascape the forces of enclosure are organized and on the offensive. As with the English enclosure, the digital communications enclosure involves mutually-reinforced layers of social action. If we hope to resist a communications enclosure, we must acknowledge how the processes and relations of force are shaping each layer, and how each layer shapes the others.

CHAPTER 3: ENCLOSURE I -- PHYSICAL

As briefly noted above, systems of ownership and governance of the *wires* and access points that make up the physical structure of the Internet are critically important to maintain elements of the communication commons. While enclosure is well underway, the transfer of physical infrastructure from public to private hands has been a gradual form of enclosure, which, like most enclosures, is never quite complete. In addition to the commons-based Internet provision (community, municipal, public) that persist, private Internet providers have been, until recently, accountable to "common carrier" rules imposed by local, state/provincial, and federal governments. Under common carrier regulations network operators (and historically, transportation operators) are required to operate their networks in such a way that they are openly available for all parties to use without discrimination.

Common carrier regulations were initially applied to the railway, mandating that the operator/owner of the rails could not discriminate against cargo based on its destination or owner. This rule makes for a level playing field for different cargo companies. The common carrier rules were later applied to telegraph and telephone networks (although not consistently) and they have now been expanded into the core principle that preserves the free and open Internet, known as "net neutrality". Net neutrality rules stipulate that Internet service providers (ISPs) are not allowed to speed up or slow down web content/traffic

based on its source, ownership, or destination. Net neutrality protects our ability to direct our own online activities; a network's job, then, is to move data in a non-discriminatory manner, based on what people want. This rule maintains a certain element of *commonality* to the Internet, but is threatened by major Internet Service Providers (ISPs), which are hoping to increase their profit margins by becoming Internet gatekeepers, charging different rates for network use.

The Genesis of Net Neutrality

The original common carrier principle dates back to some of the first telecommunications regulations in the U.S. and Canada. "Non-discrimination" provisions like net neutrality have governed the United States communications networks at least since the 1930s. The stage for common carrier regulation was set long before this time. In 1860, a US federal law concerning a coast-to-coast telegraph line stated that,

> messages received from any individual, company, or corporation, or from any telegraph lines connecting with this line at either of its termini, shall be impartially transmitted in the order of their reception...(Central Pacific Railroad Photographic History Museum, 2008, para 6)

In the following decades these telegraph laws would be extended to other communications media. In 1937, rules became more explicit when the SEC. 202. [47 U.S.C. 202] Discrimination and Preferences stated that,

> It shall be unlawful for any common carrier to make any unjust or unreasonable discrimination in charges, practices, classifications, regulations, facilities, or services for or in connection with like communication service, directly or indirectly, by any means or device, or to make or give any undue or unreasonable preference or advantage to any particular person, class of persons, or locality,

or to subject any particular person, class of persons, or locality to any undue or unreasonable prejudice or disadvantage.. (Communications Act of 1934)

Although business users began, at least a decade earlier, to lobby for policy allowing them to build wholly proprietary systems, in 1968 at a proceeding known as the Computer Inquiries, "the FCC decided that the companies providing communications services would not be allowed to interfere with or discriminate against information services" (Scott Cooper & Kenney, 2007, p. 7). While in this case, the business lobby was unsuccessful in their efforts to garner further control over digital networks, they would continue their efforts in future points of intervention.

In the 1980s common carrier policies began to be rolled back. At the Second Computer Inquiry in 1980, the FCC decided that even regulated telecommunications companies, which were the foundation of the U.S. telecommunication infrastructure, would be allowed to establish subsidiaries that could bypass existing regulation (Ibid). In 1992, the drip feed of enclosure continued with the advancement of "The National Information Infrastructure" initiative, which sought to "promote private sector investment, through appropriate tax and regulatory policies" (National Information Infrastructure, 1992, p. 1). In 1996 there was an amendment to the common carrier provision in the *1934 Communications Act*, asserting that the term "telecommunications carrier" means "any provider of telecommunications services, except that such term does not include aggregators of telecommunications services" (Telecommunications Act of 1996, 1996, Sec 49). The ruling further stipulated,

"a telecommunications carrier shall be treated as a common carrier under this Act only to the extent that it is engaged in providing telecommunications services" (Telecommunications Act of 1996, 1996 Sec 49). This amendment amounted to removing the existing common carrier requirements from Internet service provision. In 2002 the FCC issued a Declaratory Ruling for cable modem service, classifying it as an "information service". This classification change meant that cable companies would not be required to offer broadband Internet on the same non-discriminatory basis that has been the foundation of the Internet. On June 27, 2005, in a 6 to 3 decision (*National Cable & Telecommunications Association vs. Brand X Internet Services*) the United States Supreme Court ruled that cable companies, like Comcast and Verizon, are not required to share their cables with other ISPs (Cohen, 2005). This ruling not only made common carrier rules, and thus net neutrality, more or less void under U.S. law for cable Internet providers, it also further established that the wires that provide the Internet are a commodity rather than a common asset. Considering that Internet has been publicly funded since its earliest days, the 2005 Supreme Court ruling amounts to nothing less than the annexation of the digital commons.

As we noted in chapter 2, the pressure to commodify the Internet infrastructure existed well before these rule changes. However, similar to the way that the Enclosure Acts greatly sped up the processes of the English Enclosure (detailed in chapter 2), so too we can see the removal of common carrier governance as a major breaking point in the process of digital enclosure. If Internet Service Providers are allowed unfettered control of Internet service, the

march toward near complete commodification of communication access will take

a leap forward. If we think back to the terrestrial commons,

> after the decay of feudalism... the lords were able to transform
> their feudal status, which did not allow them to drive off the
> 'useowners', into a property title strong enough to license that
> driving off. (Byrne, 1995 p. 140)

One of the key enabling forces of the late terrestrial enclosure was landlords

changing their legal title so they could legally claim land as property and change

relations from feudal lord and peasant (with the associated obligations) to

landlord and tenant, thus accruing property rights. In a parallel procedure,

telecommunications corporations were able to change their title from "common

carrier" (with its associated non-discrimination obligations), to "information

service", making Internet service a property to be structured by the ISPs. The

two examples differ in many ways, but it is important to underline the relational

change that can take place as the result of changing property or use rights.

While the battle over net neutrality is far from over, the ISPs (not unlike the

gentry of English Enclosure) did not wait for a definitive ruling before embarking

on acts of enclosure. Even while public interest groups shined a spotlight on the

activities of ISPs, in September 2007 Verizon censored a text message from the

National Abortion Rights Action League (NARAL), and later said it had the right

to block "controversial or unsavory" text messages (Liptak, 2007, p. 1). In

October 2007, is was revealed "Comcast, the nation's largest cable company and

second-largest Internet service provider, is actively interfering with its users'

ability to access legal content through content-sharing technologies like

BitTorrent" (Howard, 2007, para. 1). BitTorrent is a peer-to-peer (P2P)

application that people use to share audio, video, and other digital data through

sharing each other's bandwidth. So here we have ISPs blocking or at least

limiting the use of one of the more innovative, creative, and participatory uses of

the Internet. The Associated Press calls Comcast's interference "the most drastic

example yet of data discrimination by a U.S. Internet service provider"

(Svensson, 2007, para 2).

Net Neutrality In Canada

While this thesis is primarily focused on the U.S., it is worthwhile to look at

net neutrality in Canada, as it demonstrates that enclosure can take different

forms in otherwise similar contexts. Similar to the U.S., the Canadian "common

carrier" rule grew out of the early railway legislation (Barratt & Shade, 2007).

Rules stipulated that the "obligation was on the owner of the network to ensure

that data was treated equally, as well as to make available their network to other

networks" (Barratt & Shade, 2007). Canadian common carrier rules also have

deep roots in the early 20th century, when telegraph companies were network

service providers somewhat like our ISPs. Due to a lack of industry regulation

and oversight, news services were dependent upon the two telegraph companies

for distribution. Since the telegraph companies were involved in the provision of

news, they charged punitively high rates to rivals and sometimes refused service.

The leading telegraph corporation at the time argued that rates charged for its

services were not within legitimate regulator territory (Babe, 1990).

The Canadian telegraph regulator at the time, the Board of Railway

Commission (BRC), rejected these claims and the telegraph companies were

then compelled to treat all news services equally. Later, the BRC prohibited Bell

from denying network interconnection to third parties (competing companies).

During this period of strong public interest regulation, the number of

telecommunication providers went from about 600 to 1,695 (Winseck, 1995,

p.132).

There are clear ebbs and flows in the preceding Canadian communication

regulation history, but a high point can be found in one of the first statements

from the CRTC after assuming authority for telecommunications regulation in

1976:

> the principle of 'just and reasonable' rates is neither narrow nor a
> static concept. As our society has evolved, the idea of what is just
> and reasonable has also changed and now takes into account
> many considerations that would have been thought irrelevant 70
> years ago when regulatory review was first instituted. Indeed, the
> commission views this principle in the widest possible terms, and
> considers itself obliged to continually review the level and structure
> of carrier rates to ensure that telecommunications services are fully
> responsive to the public interest. (CRTC, 1976, p. 3, as, as cited in
> Winseck, 1995, p. 193)

Bell tried to dodge CRTC oversight by arguing that carriage was not within the

purview of the CRTC. The CRTC forcefully disagreed. In a conflict between

mobile communication equipment manufactures and Bell, the CRTC was wary of

the 'system integrity' arguments used by Bell, concluding that refusing network

connectivity related to Bell's disinterest in real competition and, thus was "unjust

and discriminatory".

Much of this orientation towards assertive public service regulation faded

as we moved into the 1980s, in part due to multi national trade agreements and a

more preponderant pro-big-business ethos at the CRTC. However, Canada,

unlike the U.S., does still have some government policy that follows the logic of

net neutrality. For example Section 27(2) of the Telecom Act states,

> No Canadian carrier shall, in relation to the provision of a telecommunications service or the charging of a rate for it, *unjustly discriminate or give an undue or unreasonable preference* toward any person, including itself, or subject any person to an undue or unreasonable disadvantage. [Emphasis added]   (Telecom Act 27(2))

This provides a point of leverage for public interest groups but does little to keep

the Internet open if Industry Canada and the CRTC are so steeped in commodity

relations and ethos, that they fail to acknowledge and enforce the clear statement

above. Documents prepared by Industry Canada for parliamentary Question

Period suggest that the government agency has elements within it that are in

favour of neglecting net neutrality altogether. In the documents, Industry Canada

argues for "public policy that would enable market forces to continue to shape the

evolution of the Internet infrastructure, investment and innovation to the greatest

extent feasible" (Goodman, 2007, as, as cited in Barratt & Shade, 2007). The

pro-market orientation of Industry Canada reinforces the points made in chapter

2 indicating that the English Enclosure was reinforced by, but not initiated

through policy. The fact that Canada has telecommunication policy calling for

non-discriminatory network management yet does not enforce those rules (as

detailed below) shows that forces of enclosure can advance without enclosing

public policy, at least in the short term. Commodity property regimes adapt their tactics to the social context.

Some of the worst discordances with net neutrality have occurred in Canada. According to Michael Geist, the Canada Research Chair in Internet and E-commerce Law at the University of Ottawa, these ISPs already have a recent "history of blocking access to contentious content (Telus), limiting bandwidth for alternative content delivery channels (Rogers), and raising the prospect of levying fees for priority content delivery" (Geist, 2007, para. 9).

During the Telus employees strike in 2005, the corporation blocked access to a website run by striking Telus employees called "Voices for Change" (and at least 766 other websites) (Barrett, 2007, para 5). Those familiar with network control issues in Canada also accuse Rogers and Bell of limiting peer-to-peer (P2P) applications. In response to customer concerns, Bell (ISP) recently admitted that they "are now using 'Internet Traffic Management' to restrict applications that are using a large portion of bandwidth during peak hours. Some of the applications that are included are the following: bitTorrent, Gnutella, Limewire, Kazaa..."(Forum Administrator, 2007, para 13).

Bell also recently stated, "our position on network diversity/neutrality is that it should be determined by market forces, not regulation" (Michelis, 2006, as, as cited in The Canadian Press, 2006, para 8). Rogers (ISP) recently went so far as to forcibly display its own message on top of websites being viewed by its customers. In this case, we have an ISP imposing messages onto our users' online travels. Rogers vice-president of communications Taanta Gupta's

response to public outrage was "we're trying different things, and we'll test customer response" (Gupta, 2007, as, as cited in CBC News, 2007).

In her analysis of the terrestrial enclosure, Ellan Meiksins Wood points out that "enclosure meant not simply a physical fencing of the land but the extinction of common and customary use rights on which many people depended for their livelihood" (Wood, 2002, p. 108). In the case of these large ISPs, it is not simply that they bought up the physical Internet wires, they are now using that power to change the very properties of the Internet. Users expect to be able to autonomously use the web as part of paying for access to the Internet, but slowly over time these ISPs are removing that open access, and will likely eventually remove our expectation for it as well. When two companies dominate a market as they do in most Canadian and U.S. markets, those companies are able to regulate the service towards their own financial interests. Net neutrality regulation is a pivotal battle over our digital commons, but it is not a panacea for concentrated telecommunication power.

Digital Fiefdoms: The Wires

The forces of enclosure are triumphant in part because they push commodity relations on several symbiotic and complementary fronts at once, creating a synergy of commodity relations. Effectively denying net neutrality provisions would not be possible without this same species of commodity relations propelling the consolidation of the very ownership of the Internet infrastructure. If web users had real options for Internet service, providers would have difficulty forcing the public to give in to an enclosed, discriminatory Internet.

With a plurality of ISP ownership types, including public/municipal, co-op/non-profit and small for-profit options, the public could choose commons-based services that would likely be net neutrality-abiding ISPs. There can also be little doubt that net neutrality would be secure had the Internet remained in public and/or community hands.

As we noted in chapter 1, the Internet initially took shape as a public commons, owned and operated co-operatively by government agencies and university departments. Jeffrey MacKie-Mason and Hal Varian describe the early Internet as,

> a backbone connecting together a group of regional networks. A university would connect to its regional network, or possibly to a neighbor university that had a path to the regional network. The regional network hooked into a regional supercomputer. All of the supercomputers were connected together by the high-speed NSFNET backbone [publicly owned], and thus the whole network was linked together. (MacKie-Mason & Varian, 1994, p. 1)

MacKie-Mason & Varian describe the two main elements of Internet infrastructure: the "backbone" of the network and the "last mile" of the network. The backbone is the very fast network, made up mostly of fiber cable that connects traffic to all of the regional networks in the world. The backbone network is "maintained through a complex set of interconnection (peering) arrangements amongst the world's largest Internet Service Provider networks." (Weitzner, 2006, p. 13). The "last mile" is the piece of wire (or other method used to transport data) that connects a user to the Internet. The last mile is the space controlled by ISPs, the space that is contested in net neutrality regulations. The full architecture of the Internet is more complicated than these two elements;

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other elements include the "middle mile", "point of presence", and "Internet exchange points". While these elements do not merit discussion here, it is important to acknowledge the myriad of physical spaces that can shape the Internet.

The Backbone

In the early days of the Internet, the backbone was very much operated as a commons regime. Governance of the Internet was relatively decentralized and democratic. From 1985 on, the backbone, or core network of the Internet, was called NSFNET. NSFNET was operated and funded by the National Science Foundation (NSF), an independent government agency. NSFNET was initially comprised of existing public networks developed by various government agencies—DARPA, NSF, DOE and NASA (Mowery & Simcoe, 2002 p. 13). NSFNET was developed through public funds and it was operated with an 'Acceptable Use Policy' that "specifically excluded activities not in support of research or education" (MacKie-Mason & Varian, 1994, p. 3). The individual networks outside the backbone were run and funded autonomously and "developed informal organizational means of co-operating with one another to direct traffic and set policy" (Schiller, 1999, p. 11).

As with the terrestrial enclosure, the backbone enclosure started with a rather subtle alteration in social relations. In 1987 the NSF contracted Merit, MCI and IBM to perform an upgrade to the backbone (MacKie-Mason & Varian, 1994, p. 3). Unsurprisingly IBM and MCI were also "spearheads of the liberalization trend" (Schiller, 1999 p. 12). In 1990, Merit, IBM and MCI created a not-for-profit

corporation, Advanced Network & Services, Inc. (ANS), "which used public funds to build a network accessible by cornmercial interests" (MacKie-Mason & Varian, 1992, p. 4). ANS would later be given responsibility for the backbone that was previously under public control.

Also in 1990, the NSF convened a meeting with economists, public policy specialists, industry representatives, and university networking personnel where they would devise a process to turn the backbone over to commercial interests (Kahin, 1990; Shah & Kesan, 2007). Privatization of the backbone was nearly a foregone conclusion at this point, but it is interesting to note that attendees at the NSF meeting, designed to chart the future of the Internet, included representatives from the very entities that would eventually inherit the backbone: AT&T, IBM, MCI. While the option of continued non-profit governance was mentioned, it was asserted that a non-profit entity could likely not raise the needed funds -- although it had successfully raised funds up to this point -- and that it was "not readily apparent how a broadly representative nonprofit corporation, or even a cooperative, could be constituted in a form its many heterogeneous users would embrace" (Kahin, 1990, p. 1). This statement seems to be a subtle way of saying that the commercial interests would not approve of having a non-profit network that might prevent those same interests from inheriting additional public communication infrastructure.

This meeting followed a period comprised of what Dan Schiller described as a time of "rapid fire innovations" (Schiller, 1999, p. 11). Considering the level of innovation described by Schiller, it is hard to make a genuine case that a

drastic shift from public to private governance was necessary. The forces of enclosure, combined with an institutional cornmodity property ethos, induced the privatization of the Internet. By late 1991, the NSF released a Project Development Plan outlining its goal to create a new network structure, which was to be anchored by commercial backbone providers within 18 months (Wolff, 1992, as, as cited in Shah & Kesan, 2007, p. 6).

Until 1991, NSF maintained an Acceptable Use Policy (AUP) that prohibited use of NSFNET for "commercial purposes" (MacKie-Mason & Varian, 1994). Commercial users could still use the backbone as a research tool but were barred from using it to conduct business. Predictably, "as more commercial users attached to the network, on their own or in partnership with academic institutions, they lobbied the NSF to abandon the AUP" (Mowery & Simcoe, 2002, p. 14). It is notable that these private networks were simply "spin-offs from the nonprofit regional networks funded by the NSF" (Shah & Kesan, 2007, p. 5). This is a clear example of external relations of force initiating and driving the process of enclosure. Commercial interests were able to enclose part of the communication commons, which they were able to use as a launch pad to perpetuate enclosure through investing profits. The returns derived from the private networks could then be employed to facilitate and increase the velocity of enclosure, lobbying, mergers and property development. The 'cycle of enclosure' successfully injected insidious relations of force that became prevalent in governing institutions. Once embedded in the governing institutions, the

commodity relations can be efficiently and ubiquitously distributed through the defined social space – if unchallenged.

In 1994, NSF asked the regional networks to disconnect from the public backbone and instead connect to "Network Access Points" (MacKie-Mason & Varian, 1994). In 1995 the NSF transferred control of its four major Network Access Points to Sprint, Ameritech, MFS, and Pacific Bell (Mowery & Simcoe, 2002, p. 15). On April 30, 1995, the public backbone (NSFNET) was retired (MacKie-Mason & Varian, 1994). Once private firms could efficiently extract profits from Internet users they "made massive investments in building a global broadband communications infrastructure" (Mowery & Simcoe, 2002, p. 22).

These developments very much fall in line with the history of telecommunications in the U.S. (Winseck,1998). The telegraph, also developed with public funds, was turned over to private hands despite its proven importance and effectiveness (Brock, 1981, as, as cited in Shah & Kesan, 2007). Since this decision helped develop the commercial resources needed for a strong telecommunications lobby, it also likely manifested or at least animated, a social-political-economic infrastructure that would propel the forces of communication enclosure. This social-political-economic infrastructure of enclosure haunted any future efforts to develop a communications commons in the U.S. One of the last efforts to push back the backbone enclosure was the proposed 1994 *National Public Telecommunications Act*. The Act called for setting aside 20 percent of the backbone for noncommercial use (Shah & Kesan, 2007, p. 4). Despite the fact that this bill would allow 80 percent of the backbone for commercial purposes,

the forces of enclosure were too well entrenched in the dynamics of policy development: the bill failed to pass (Shah & Kesan, 2007, p. 4).

Verizon, AT&T, and Qwest now own major sections of the Internet backbone along with other major players like Level 3 and Sprint Nextel (Worthen, 2006). While the level of concentration of the backbone is not as deep as the last mile ISP market, it is notable that Verizon, AT&T, and Qwest in addition to being major landlords of the Internet backbone, are also the three largest last mile ISPs in the U.S. Control of the backbone provides another interconnection point where these large ISPs can employ their discriminatory practices. This situation becomes more disconcerting when we consider that unlike the last mile, the backbone was privatized without adding firm regulatory restrictions or oversight (Shah & Kesan, 2007). In 2005, Level 3 Communications, a company that owns a large section of the backbone, decided to stop exchanging traffic with the smaller provider Cogent, leaving its customers only partially connected to the Internet (Shah & Kesan, 2007 p. 11).

The development and privatization of the backbone in Canada was remarkably similar to that in the U.S. The national backbone, called CAnet, was publicly funded by universities and the National Research Council (Gutstein, 1999). CAnet was operated on a non-profit basis by CAnet Networking Inc. until March 31, 1997 (CANARIE, 2007). The CAnet Board chose Bell Advanced Communications in 1995 as an industry partner in CAnet upgrades, as well as the chosen industry candidate for the "eventual 'commercialization', or 'handing over' of CAnet" (CANARIE, 2007). The previous quote comes from the Canadian

Network for the Advancement of Research, Industry and Education (CANARIE),

which was the publicly funded organization tasked with accelerating "Canada's

advanced Internet development": meaning privatizing the backbone (CANARIE,

2007). Members of CANARIE included companies (including Bell) that would

directly benefit from privatizing the public backbone (Gutstein, 1999). In both the

U.S. and Canada, the control of this once public resource, by commercial

interests, could take on major significance in the future battle for the

communications commons.

The Last Mile

If one wants a concrete example of the dangers of an unchecked enclosed

backbone network, one need only to look at the last mile. The controversies

concerning net neutrality outlined above, all concern the last mile. While the

privatization of the backbone occurred as late as the 1990s, the provision of

Internet service was in many ways an enclosure-in-waiting. One way to look at

the unfolding Internet provision is to look at AT&T's transition from a tightly

regulated national monopoly telecommunications provider, to giant, relatively

unregulated, ISP. In1971, AT&T had to allow competitors to use the telephone

network for data services without interference, as ordered by the FCC (Daggett,

2007, p. 3). AT&T was also not allowed to offer data service itself since it would

have an unfair advantage due to its ownership of the network. Common carriage

rules, the public backbone, and the 1984 AT&T forced divesture, facilitated a

relatively competitive and innovative market of Internet services (Daggett, 2007).

In the 1990s, the *Telecommunication Act* and other regulatory changes set the

stage for the consolidation of the ISPs (Mowery & Simcoe, 2002, p. 21). As it

stands today, in most U.S. markets, citizens have to deal with a duopoly in

broadband service, and some communities do not even have two choices

(Turner, 2007).

Looking at the differences and similarities between the U.S. and Canada

last mile deployment demonstrates that enclosure can take very different forms

and manifest at differing speeds depending on the breadth of commons relations

compared to commodity relations. The last mile ownership patterns took a

somewhat different path in Canada. In the U.S. ISP industry we saw a national

regulated monopoly turn into a competitive market, ending with an uncompetitive

oligopoly we have today. In Canada, there was a somewhat similar trajectory

with Bell Canada and other large telecommunication companies. But the early

Internet also saw a vibrant -- and sometimes publicly funded – community-

network sector, as well as several public provincial networks.

In Canada, the 1990s proved a pivotal time for the physical layer of the

digital commons. Independent ISPs were on defence against big

telecommunication companies, which wanted access to the Internet Service

market. The independent ISPs argued that big telecommunication companies

should not be allowed to take over the ISP market because they controlled

access to the local networks, amongst other advantages, and they could thus

exploit their monopoly position. Bell argued that there was plenty of competition

in the market and that ISPs in the U.S. were bundling services without any

negative effect (Winseck, 1998). Arguably to the detriment of Canadian Internet

users, the CRTC accepted this argument. In 1995, Bell and Telus withdrew their basic network service that the independent ISPs relied on, and introduced another service that was 300 percent more expensive (Winseck, 1998, p. 297).

Prior to the withdrawal of reasonable network service by Bell and Telus, the ISP sector was very competitive with many small independent providers. Large cities like Vancouver supported 15-20 ISPs -- this was a period of rapid growth, about 10 percent per month (Winseck, 1998, p. 297). One of the main reasons most Canadians now have only two Internet service providers to chose from is because the CRTC failed to block these conglomerates' abuse of their monopoly position in the 1990s.

Before the deregulation of Internet service in Canada, community networks numbered as high as thirty-five, with over 250,000 members across Canada (Gutstein, 1999, p. 260). These commons regimes were "non-profit, locally based, locally controlled, and locally owned computer-based communications networks that provide access to community resources and other information" (Gutstein, 1999, p. 260). Community networks in Canada for the most part were volunteer based and gave service away for free. To maintain service, community networks relied primarily on government grants, which were geared towards providing Internet service to those who could not otherwise receive it (Gutstein, 1999). The combination of unsupportive regulatory policy, and a lack of sustainable revenue, prevented most community networks from keeping up with technological developments.

Unlike the U.S., several provinces in Canada utilized public telecommunication networks for Internet provision. Looking as far back as the early 20th century in the age of the telephone, the provincial governments of Manitoba, Saskatchewan, and Alberta were spurred to create their own telephone companies in reaction to Bell's aggressive, predatory and monopolistic practices (Babe, 1995, p. 190). The Manitoba, Saskatchewan, and Alberta telephone services continued to be primarily publicly owned until the early 1990s; Manitoba Telephone System (MTS) was owned by the province, Saskatchewan Telecommunication (Sask Tel) was owned by the province while connecting with seventeen small co-operatively owned exchanges, and Alberta Government Telephones (AGT) was also provincially owned (Babe, 1990).

We might like to think that long term public Internet ownership would produce commons relations of force strong enough to defend and even expand these regimes -- however, all but SaskTel have since been privatized. In 1990, AGT was privatized by the provincial government and is now known as TELUS Communications, which later became one of the largest ISPs and cell phone carriers in Canada (Heritage Communty Foundation, 2004). By 1997 Manitoba Telephone System (MTS) was also privatized (MacKinnon, 2007, p. 1). In contrast, Sasktel continues to operate with a public interest mandate, and provides service to rural communities that private corporations would find too unprofitable, while also pumping money into the public treasury ($783 million between 1987 and 2001) (Swift, 2003 p. 103). While SaskTel maintains competitive services, the recent provincial election victory of a neoliberal

Saskatchewan Party, could make SaskTel the next commons regime turned into a commodity property regime. One of the first announcements made by the Saskatchewan Party upon taking office was their promise to review crown corporations for possible privatization.

The enclosure of the Manitoba and Alberta networks, despite being effective communications commons regimes, with long histories and deep social relations, illustrates that commons regimes are not necessarily in a strong position. The timing of these privatizations corresponds in part with the sudden growth in the economic value of telecommunications networks, and thus the increased clamour of commercial interests for this prized public resource. The early 1990s onward also witnessed the triumph of a popular neoliberal ethos throughout much of North American society.

Spectrum Enclosure

While a detailed history and run-down of contemporary policy concerning wireless spectrum is beyond the scope of this text, it does merit at least a brief discussion pertaining to the last mile of Internet provision.[4] Much like the Internet's wires, wireless spectrum has a history of iterative enclosures. Early on in analog radio deployment, local stations operated as commons regimes; many were neither public nor private, and were supported by their listeners (Kidd, 1998). However, once radio became an established medium, it was essentially turned over to commercial interests. For example, in April 1932 the U.S. Federal Radio Commission gave major commercial stations favourable frequency

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[4] For a detailed look at radio spectrum, and mobile communications, see Gow & Smith, 2006.

assignments, while non-profit and community stations were given "severely truncated frequency rights" (Hazlett, 1990, p. 157). While community and public radio play an important role in society, corporations have come to dominate radio, especially in the U.S. (McChesney, 1999).

Digital wireless spectrum is now often used to deliver the Internet in place of the last mile of wire. While some spectrum frequencies are unlicensed, and thus open for public use (see chapter 6), the most powerful spectrum bands remain in the hands of big corporations. There is also a policy orientation towards deregulation, with the view of spectrum as property that should be auctioned off to the highest bidder rather than maintained as a common resource (Longford, & Chion, 2007). These auctions (both in Canada and the U.S.) inflate spectrum prices and encourage concentrated spectrum ownership (Longford & Wong, 2007). This structuring of, what is by its very nature, an un-owned public resource, highlights the role of the state in ensuring or disabling common-based access to public resources. Apart from transmission and reception infrastructure, spectrum naturally exists without investments, and it is the state, as a commons regime or not, that configures the orientation of its use. However, it is again worth noting that the state is a site of social struggle; both its composition and its policy positions are impacted by wider social dynamics. While openings for commons-based use of unlicensed spectrum remain, current trends point towards the continued corporate appropriation of high-value spectrum.

Net neutrality is an important near-term battle to take back our digital commons. However, if we want the infrastructure of communication to be truly

regulated as a commons, we will need to either re-appropriate the networks through state-based commons regimes, or more likely, create real competition in ISP markets, which means creating a plurality of ISP ownership types: municipal/public, co-op/non-profit, and independent for-profit ISPs. We need to encourage regulatory bodies and politicians to freely allot spectrum for community and municipal ISPs, or provide open spectrum. After all, these are our public airwaves and we have the right to allot them to public benefit organizations and institutions rather than commodity property regimes.

The highly concentrated for-profit ownership of the physical Internet allows big telecommunication companies to regulate Internet service, deepening relations that increase their control and dominance of Internet provision. The current level of ownership concentration and the corresponding regulatory environment provides new entrants (commons-based or not) with seemingly insurmountable resource challenges. The cycle of enclosure completes and redoubles, using excessive profits from monopolistic markets to lobby governments and buy up competitors. This is but one layer of our digital communications networks, but each layer of the Internet very much affect the others. One layer, if enclosed universally, could provide the relations of force to compel the other layers to do the same.

CHAPER 4: ENCLOSURE II -- CONTENT

The content layer of the Internet, the space directly governing the production, circulation, and reception of cultural artefacts on digital networks, is itself being enclosed through evermore restrictive control mechanisms. These mechanisms of control create cultural bottlenecks in each stage of cultural expression. In this chapter we will illustrate how the boundaries of cultural production are enforced through, and defined by, copyright legislation, media technology architectures, and the political economy of media (concentration of ownership, profit orientation). We will show that the contours of the cultural production milieu are enforced by state power and often initiated by commercial media interests. Copyright legislation alone is often not enough to control the production, circulation and reception of culture. Where legislation needs reinforcement, commercial media interests act to limit communication technology designs, architectures and infrastructures, steering cultural production toward the domain of commercial media and their distribution partners. The commercial media content owners (who are not necessarily the authors) are the main catalyst of the latest, and perhaps most invasive, efforts to enclose creative cultural production and the culture commons.

As we will see below, copyright owners are now turning some of their energy towards altering the current ISP mode of operation – encouraging filtration of Internet traffic for copyrighted content through the physical layer of the

Internet. The forces of enclosure between layers, and also those of the wider social totality, can, as this example shows, interlink, creating a confluence of force. Forces of enclosure from different layers or domains, combined, can produce a kind of cascading effect, with each layer feeding into the next. The overlapping of forces generates not simply a successive process (although they could be in some instances), but also, and more commonly, a convergence of processes. For example, the cohesion between the copyright owners drive to control content, and the ISPs drive to control Internet traffic, unites in a multiplied mutually reinforcing social energy. One enclosure is indivisible from the whole.

This confluence of force social dynamic is important to consider both between the layers of the Internet, as well as the merging or new digital media commercial interests, with the interests of traditional media corporations (radio, print, TV). However, often the political economy of traditional media is seen as somehow distinct from new digital media. In the view of many enamoured with the emancipatory possibilities of the Internet, the highly concentrated and commercialized traditional media system has little effect on the networked digital communications system. According to Markos Zuniga, the founder of one of the most popular weblog, 'Daily Kos':

> What we once considered serious dangers to our democracy—things like media consolidation and the absence of balance and fairness—will become increasingly less important. We are at the beginning of the age of citizen media, where corporations can own vast, billion-dollar media outlets yet fail to control the flow and content of the information. It's quite hard to be a media gatekeeper when everyone becomes media, and that's what we're seeing happen in the age of blogs, wikis, social networking sites, podcasting, vblogging, message boards, e-mail groups and

> whatever wonderful communication technologies emerge tomorrow.
> (Zuniga, 2006, p. 10)

Leaders of the online "citizen media" movement, like Markos Zuniga and Dan Gilmore, point to advancements in media technologies and higher levels of citizen participation as the chief impetus needed to democratize communication. Proponents of this point of view focus on the fact that "modern communications give anyone who cares the tools to learn more—far more—about people and organizations", rather than the underlying economic relations and patterns of ownership (Gilmore, 2004 p. 62). We must be careful not to uncritically celebrate new media because "technological fixes for political problems have such a dismal history that great caution is warranted before relaxing into that potential as if it were a sure thing" (Downing, 2001, p. 199).

The view that new media technologies alone are enough to democratize communication ignores the multiplicity of social factors at play -- the enabling and constricting conditions that contribute to the bearing and velocity of social processes. One key fact that those who blindly celebrate online media miss, is that the Internet is effectively used by corporations to amplify their voices, and in fact the most the popular websites are owned by large corporations (Klinenberg, 2007). New technologies "drastically reduced distribution costs but not the need for promotional resources to attract attention in an environment still dominated by media, software and telecommunications giants" (Hackett & Carroll, 2006, p. 59). As James Curran notes, "new technology has not fundamentally changed the underlying economic factors that enable large media organizations to maintain their market dominance" (Curran, 2003, p. 227). All of these points

could not be more justified considering the details laid out below concerning copyright policy formation and media content technologies.

Commodity property regimes (corporations) are structured to achieve ever-increasing profits, and thus, must deepen current enclosures and expand to new domains. This underlying logic of enclosure is inclined to create scarcity, as rents can most effectively be extracted from subjects facing scarcity. Anything in abundance can more easily be shared, held in common, and thus, can remain largely elusive to commodity property regimes. As Robert Rao succinctly puts it, artificial scarcity of information ensures "that there is a market price for the work by granting a temporary monopoly over ownership and restricting dissemination to those granted licensing rights" (Rao, 2004). Despite the current openness of the Internet, corporations are able to embed elements of the Internet with a system of information scarcity.

Free of imposed scarcity, information, knowledge, and indeed culture, as naturally common and in abundance. Culture is non-rivalrous, meaning that providing access to a piece of information to someone else, or even to everyone else, does not limit one's access to that information. Not only is online media non-rivalrous, it is also cheaply distributed – thus the drive for charging per use seems to be pure rent-seeking behaviour. This is not to say that commodity property regimes cannot impose commodity relations on the flow of information – they certainly have historically. For example, in order to justify and impose control over information and cultural production, forces of enclosure "use laws, contracts, and technology to foster scarcity" (Vaidhyanathan, 2002, p. 3). A

distributive communication network, such as the Internet, undermines the

imposition of commodity property relations onto available culture, but commercial

interests are in the process of enclosing the mechanisms of control this

communication network.

Both forces of enclosure and commons logics have feedback loops that

instruct where the pressure points are. If the forces of enclosure are blocked at

one point, they adapt and evolve, transferring more energy towards a more

malleable point of control. This multi-spatial action is evident in the strategies

used by copyright holders trying to implement their regime of content control on

new media through a

> three–pronged strategy, first suing their erstwhile customers for
> copyright violations, second, lobbying fiercely in the U.S. Congress
> to get legislation that both stiffens copyright restrictions (often
> violating traditional norms of "fair use") and to outlaw certain
> technologies that they deem "induce" piracy, and third, leading an
> "education" and intimidation campaign against music piracy. (Frost,
> 2007, p.1)

As Micheal Geist notes,

> [this] vision of control through technology required considerable
> coordination -- the insertion of encryption on content distributed to
> consumers, cooperation from electronics makers to respect the
> technological limitations within their products, and new legal
> provisions to prohibit attempts to pick the new digital locks. (Geist,
> 2008, p.1)

These strategies have been largely unsuccessful amid the well-distributed

resistance and technological properties that counter this form of centralized

control. The Internet is relatively open, and its underlying architecture coupled

with recent technological innovations continues to provide new possibilities for a

radically-democratic media circulation system. However, as copyright scholar Siva Vaidhyanathan points out, when opportunities for radically democratic media circulation arrive, "governments and corporations often through the expansion of copyright law have quickly worked to correct such trends" (Vaidhyanathan, 2001, p. 7). Forces of enclosure continue to push not only for increased control of the cultural artefacts already owned as commodities, but also to commodify cultural expressions/ingredients that currently reside in the commons (public domain/fair use), while enclosing the commons-based mechanisms for production, circulation and reception of media.

From Common Culture to Private Commodity

Copyright and broader intellectual property regimes enable corporations to compile cultural artefacts[5], limiting our ability to interact with our common cultural heritage. Intellectual property can be thought of as a "bundle of rights conferred to owners by each of the following fields of law: (1) patent law; (2) copyright law; (3) trademark law; (4) trade secret law; and (5) the right of publicity" (Quinn, 2007, p. 1). Intellectual property rights (IPR) regimes cover "intangible works such as literary and artistic works, photographs, fills, videos, recorded music, tapes or discuss, architectural drawings, industrial designs and patterns, computer software, and database programs" (Gutstein, 1999, p. 126). While all the above categories of IPR affect digital communications, copyright law is of particular relevance to the content layer of the Internet. Copyright sets monopoly

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[5] Copyright terms have been continually extended, starting from 14 years after creation, to up to 95 years in the U.S. These extensions have allowed media corporations to continually compile cultural artefacts rather than making them available in the public domain.

rights pertaining to "reproduction, derivatives, distribution, performance, and display" of media content and other cultural works of authorship (Lutzker, 2003, p. 21). Unlike other IPRs, cultural works under U.S. law are automatically copyrighted once they are put into a fixed tangible medium of expression, which includes posting media on the Internet. If one wants to publish media content on the Internet and make the work available free of copyright, it essentially needs to be uncopyrighted, or at least publish a note stipulating that the piece is freely available for use. As it stands, this copyright system makes contributing to our culture commons more laborious, while making effortless the process of turning cultural expressions into commodities. This copyright regime also constrains our collective ability to build upon each other's cultural productions. If we want to build upon a video we find online, unless the proposed work meets the strict requirements of 'fair use', we will have to somehow get in touch with the owner (who may not be the author) and ask for permission to use it. Then of course the copyright owner has the right to deny permission. This labour-intensive process clearly stifles the quantity and diversity of cultural works[6].

Two additional elements of copyright law are 'fair use' and the 'public domain'. Fair use is a provision in U.S. copyright law that exempts cultural producers from copyright liability under certain conditions. Broadly speaking fair use can be used to cover works that only use an "appropriate" amount of a copyrighted work in order to "transform the material taken from the copyrighted work by using it for a different purpose than the original" (Center for Social

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[6] Anne Elizabeth Moore (2007) notes that many artists now just avoid using any cultural works that are corporate owned.

Media, 2005, p. 2). While fair use is an important safeguard to maintain some elements of a culture commons, debate over exactly what falls under fair use is often fought in the courts, where media content owners often have unsurpassed resources.

In addition to utilizing materials under fair use, content creators can also freely use material that is in the "public domain". The public domain is a repository of cultural materials that are free to be used without clearance or compensation (Lutzker, 2003). Unlike fair use, when a cultural artefact is in the public domain, there is no justification required for use. Any cultural artefact that is not copyrighted is considered to be in the public domain. However, as noted above, current rules apply copyright to any item put in a fixed medium – thus, most cultural works are not put in the public domain irrespective of whether the creator is aware of, or even interested in copyrighting their work. The majority of new public domain works are past works that have outlived their copyright terms (the set number of years where copyright applies). As we will note below, the terms of copyright have been repeatedly extended since the inception of copyright. The effect of both extending copyright terms, while forcing copyright on all published cultural works, is that the public domain is being artificially thinned at both the beginning and the end of the cultural circulation process.

We might consider the public domain a commons, but one could question whether the public domain is adequately governed by moral reciprocity or community service ethics. Essentially, commodity property regimes can create a "tragedy of the commons" (or more aptly called a tragedy of enclosure') by

extracting cultural artefacts from the public domain without proper reciprocation.

For example, individuals and corporations sometimes transform, however

slightly, media found in the public domain, and then use copyright rules to claim

ownership over them. Many of Disney's most prized characters and works were

transformed works from the public, and are now claimed them as Disney

property.

While the current content owners are not the creators of the cultural

expressions in their portfolios, they claim monopoly rights to these resources.

Cultural artefacts are created in part from our experiences with cultural

expressions and social interactions – and thus, should not be wholly owned by

any commercial entity. We may add our own creativity and ingenuity, but cultural

creations cannot be completely original. As Lawrence Lessig puts it:

> Creators here and everywhere are always and at all times building
> upon the creativity that went before and that surrounds them now.
> That building is always and everywhere at least partially done
> without permission and without compensating the original creator.
> (Lessig, 2004, p. 29)

Our cultural vocabulary is in fact a complex mixture of collective and personal

expression. Given that the nature of cultural production cannot be separated in

terms of what is additive and what is recycled, it is difficult to justify monopoly

rights to any cultural expression. Donald Gutstein outlines some ingredients of a

typical cultural artefact:

> ...words, sounds, images, facts, and ideas that derive from the
> common culture and are picked up free from the common store of
> such information. We go to the taxpayer-supported library and use
> reference books. We learn about subjects in taxpayer-supported
> education institutions...We talk to people who freely convey

information and opinions to use. We read newspapers and magazine and watch television, picking up ideas from them. We listen to music and hear sounds all around us (Gutstein, 1999, p. 156).

Given that cultural production involves the inclusion of aspects of our collective cultural heritage, it is by nature a collective production and thus should be viewed as a common resource.

Often even those critical of strong intellectual property rights give into the underlying logic of commodity property regimes by assuming that some kind of profit incentive is required to compel cultural production. This view does not make sense when put in a historical context. As Jenkins notes:

> ...historically, our culture evolved through a collective process of collaboration and elaboration. Folktales, legends, myths, and ballads were built up over time as people added elements that made them more meaningful to their own contexts. (Jenkins, 2003, p. 7)

Human beings may need to be induced to commercially exploit their art, to give rights to their creation over to commercial interests, to prescribe their expressions so as to fit it with the narrow demands of commercial circuits of culture distribution, but they do not need economic incentives to produce art. In short, people do need to be compelled by external forces to create cultural commodities; human beings do not need to be compelled by external forces to produce culture.

The Trajectory of Copyright

Below we will again see the reciprocated feedback loop that we find on other layers of the digital communications system: as more cultural production

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falls under the reins of copyright regimes, the more force can be exerted into lobbying for further enclosures. William Landes and Richard Posner encapsulate this dynamic well:

> The enforcement of an exclusive right to intellectual property can shower economic rents on the holder of that right, but copiers can hope to obtain only a competitive return. This should make it easier to organize a collective effort of copyright and patent owners to expand intellectual property rights than it would be to organize a copiers' interest group to oppose such an expansion. (Landes and Posner, 2004, p. 14)

As with the entire digital enclosure, we must consider the forces at play in the wider social totality as well. Landes and Posner (2004) also point out that the expansion of the intellectual property regime culminating in the *1976 copyright statue*, began roughly at the same time as the wider deregulation movement. As Landes and Posner put it,

> Beginning in the late 1970s and continuing almost to the present day, a number of important industries in the transportation, communications (including broadcasting), energy, and financial service (including bank) sectors – industries that until then had long been subject to comprehensive public regulation, mainly of the public utility or common carrier variety—were wholly or entirely deregulated. (Landes and Posner, 2004, p. 11)

Thus, the social context of the *1976 copyright statue* contained a kind of 'meta-enclosure' that radiated commodity property relations, symbiotically relaying in multiple domains – a spiral of exclusion. This underlying economic logic of society provides an important backdrop to the trajectory of copyright detailed below.

The history of copyright is nearly as long and complex as the history of terrestrial property rights. The two property rights regimes have many parallels

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and some important linkages. For our purposes, we do not need to go through a compressive history of copyright[7], but we will note some key historical developments that help ground current circumstances. First, it is useful to note that the copyright was first employed by the British government as a means of censorship after Gutenberg invented the printing press in the 1440s (Middleton & Lee, 2008, p. 235). Perhaps reflecting an underlying change in the relational dynamics of society, the British government was later pressured to ease this control by authors and publishers. In 1556 the British Crown granted the Stationers' Company a monopoly on printing, primarily to check the spread of the Protestant Reformation (Middleton & Lee, 2008, p. 235). While commercial enclosure was not the first force to compel the development of copyright legislation, control of cultural production and circulation by the dominant institution (the State), was the inducement in the beginning. This legacy continues with the recent expansions of IPRs, spurred by the present dominant institution (corporations).

While acknowledging that scattered public interest victories provide for a somewhat non-linear path to copyright policy development, there remains a clear historical trajectory of copyright moving from less to more restrictive limits on cultural production:

- (1556) The British Crown granted the Stationers' Company a monopoly on printing;

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[7] For a compressive look at the history of copyright, see Lawrence Lessig, (2004), and Siva Vaidhyanathan, (2001).

- (1710) 14 years plus a second 14 years if author was alive when the first term ended; 21 years for all works published previous to the law;

- (1790-1831) The first U.S. copyright law: 14 years plus a second 14 years if author was alive when first term ended;

- 1831-1909: 28 years plus renewal for 14 years;

- 1909-1977: 28 years plus renewal for another 28 years;

- 1978-1997: life of author plus 50 years or, in the case of works owned by entities, 95 years from creation. Retroactively all works in 1909 term get an extra 19 years protection;

- 1998 onward: Life of author plus 70 years or, in the case of works owned by entities, 95 years from creation. Retroactively all works in 1909 term get an extra 19 years protection (*Digital Millennium Copyright Act*) (Lutzker, 2003 p. 64; Gutstein, 1999 p. 130; Middleton & Lee, 2008 p. 235; Lessig, 2004, p. 86).

Copyright policy, like all policy, is not developed in some simple cause and effect process. Vaidhyanathan is correct when he notes that:

> Copyright policy is set through complex interactions among a variety of institutions. International organizations, federal agencies, Congress, state legislatures, law journals, private sector contracts, and the habits of writers, artists, and musicians all influence the operation of the copyright system. (Vaidhyanathan, 2001, p. 7)

While the above elements all play into the mutual constitution of IPR policy, there is also an underlying logic and trajectory that pervades the universe of copyright. The agglomeration of the above elements, in combination with this underlying commodity property logic, produces a force of enclosure.

The first federal copyright law in the United States was adopted in 1790; the copyrighted culture included a very narrow set only including maps, charts and books, and allowing derivative works (like a book turned into a play) (Lessig,

2004, p. 136). Over the following eighty years, protections for prints, musical

compositions, photographs, and paintings were added to the list of protected

works, and terms of protection were extended (Middleton & Lee, 2008, p. 235).

The most significant forthcoming copyright changes, 1909, 1976 and 1998,

seemed to come on the heels of successive media copying/circulation

technology innovations (Lessig, 2004).

Commodity property logic seems to have been well-established in the

early 20th century when patents granted to Thomas Edison through a monopoly

trust, the "Motion Pictures Patents Company", were used to disrupt shooting by

independents — the tactics used included stealing machinery (Lessig, 2004, p.

53). Later, in 1976, most of the language of the *Copyright Act* "evolved through a

process of negotiation among authors, publishers, and other parties with

economic interests in the property rights the statute defines" (Landes and

Posner, 2004, p. 14). In the 1990s:

> Copyright owners were generous contributors to House and Senate
> sponsors and supporters of the Sonny Bono Act...the television,
> motion picture, and music industry donated $1,419,717 to six of
> act's eight sponsors and co-sponsors...Disney, MCCA, Viacom,
> Paramount Pictures, and Time Warner all donated conspicuously
> large amounts. (Davis, 2003, as, as cited in Lades and Posner,
> 2004, p. 16)

The cycle of enclosure continued in 1995 when Recording Industry Association

of America (RIAA) persuaded Congress to establish a copyright amendment

establishing a public performance right in digital audio transmissions (Lutzker,

2003, p. 27). The public performance amendment proved to be a useful tool in

the content owners' fight against content sharing online.

Looking at the strength of the copyright lobby and depth of copyright restrictions, we can see a cascading effect of enclosure: each expansion of enclosure deepens enclosure relations of force, leading to further successive cycles of enclosure. Lessig conceptualizes this process as a "congressional perpetual motion machine: so long as legislation can be bought (albeit indirectly), there will be all the incentive in the world to buy further extensions of copyright" (Lessig, 2004, p. 218). The result of this escalating cycle of enclosure is, according to Gigi Sohn, 35 years of "nearly unmitigated expansion of the scope and duration of copyright" (Sohn, 2007, p.18).

To complement legislative action, content owners have launched an education campaign to equate file sharing with stealing, through educational institutions (Frost, 2007). Part of this strategy includes content owners pushing legislation that would tie education funding to copyright enforcement. On February 7th, 2008, the U.S. House of Representatives approved the *College Opportunity and Affordability Act*, which stipulates that "higher-education institutions participating in federal financial aid programs 'shall' devise plans for 'alternative' offerings to unlawful downloading—such as subscription-based services--or technology-based deterrents to prevent such illegal activity"(Broache, 2008, p.1). If this bill becomes law, schools risk losing their financial aid if they fail to comply.

The content owners also 'educate' by taking legal action against college students who share cultural works. In January 2008 the RIAA, on behalf of the major record companies, sent 407 pre-litigation settlement letters to 18

universities nationwide, giving the sharers the opportunity to "promptly resolve the matter and avoid a lawsuit" (RIAA, 2008, p.1). One woman was recently sued for $222,000 for "making available" songs on the Internet (McCullagh, 2007, p. 1). It appears that the content owners' fear that values and practices that involve sharing media, will create long lasting resistance to top-down media distribution. According to the RIAA spokesperson, "college students have reached a stage in life when their music habits are crystallized, and their appreciation for intellectual property has not yet reached its full development" (Reisinger, 2008 p. 1).

Copyright restrictions are so limiting that they are becoming unreasonable on even free market economic terms. In pointing out how far we have gone to enclose culture, James Boyle notes, "could we imagine giving a plumber control over the pipes she installs even after the work is paid for, or a cabinet maker the right to veto the conversion of her writing desk into a television cabinet?" (Boyle, 1988, p.2). The latest copyright rules enable unimpeded and fortressed commodity cultural production, while restraining the commons-based production. For example, recent copyright changes provide the tools for large copyright holders to litigate over nearly anything that might threaten their profits. This incessant litigation, which can bring lawsuits as high as $150,000 per infraction, has meant that "reliance on fair use has become the province of only the bravest of artists, academics and commentators" (Sohn, 2007, p. 10). Anne Elizabeth Moore reports that, "many artists have in recent years avoided all things brand-specific and corporate owned, which underutilizes vital defence like the fair-use statute, allowing them to waste away to nearly forgotten" (Moore, 2007, p. 73).

Early in the history of American copyright law, copyright owners were actually required to deposit copies of their work in libraries as a contribution to collective culture (Lessig, 2004, p. 111). Current rules are a far cry from such early provisions, now even non-commercial transformative works are locked down by copyright restrictions.

The culmination of the coiling cycle of enclosure is the enacting of the *1998 Digital Millennium Copyright Act* (DMCA), which as we will see next, imposes copyright rules on communication technology architectures. The DMCA has enabled the granting of rights covering uses of works to be "extended to the right to control access in digital formats" (Lutzker, 2003, p. 79). Despite the trajectory of copyright and IPRs towards increased commodification, sharing continues, nearly unimpeded. As a result of continued successful resistance to the above measures, the forces of enclosure on the content layer have moved more of their energy towards imposing copyright restrictions through the technological mechanisms we use for communication.

Circumventing Culture

In conjunction with legislation and 'education' strategies, large content owners are also using "Digital Rights Management" (DRM) technologies, aimed at controlling the production, circulation, and increasingly, the reception of media content. Examples of DRM ("circumvention") technologies include "encryption, copy control, digital watermarking, fingerprinting, traitor tracing, authentication, integrity checking, access control, tamper-resistant hard and software, key management, and relocation as well as risk management architecture" (Kerr,

2005, p. 173). At the heart of this more penetrating iteration of enclosure is the interaction between government policy and media technology architectures. Dissatisfied with the persistent content sharing occurring online, copyright owners (primarily representatives of major movie studios, record labels, software companies and book publishers) lobbied for legislation preventing the manufacture and sale of devices that could technologically open digital locks, which would render an act of circumvention unlawful (Lutzker, 2003, p.74). These efforts proved successful, when the1998 DMCA passed, complete with an "anticircumvention" provision that read, "No person shall circumvent a technological measure that effectively controls access to a work protected under this title" (Rowland & Macdonald, 2005, p. 500). Given that DRM technologies often block many uses of copyrighted content, these technologies function to dispossess content users of their ability to build on cultural artefacts– even if such actions are legal under fair use. This dispossession of our capacity to partake in commons modes of cultural production and circulation is a clear case of Harvey's "accumulation by dispossession" (Harvey, 2004, 73). The dispossession of the culture commons directly expands the assets and rents of commercial content owners.

Appropriating Production

The methods and context of cultural production inscribe certain values and privilege certain cultural expressions and practices over others. Some media technologies, such as decentralized networks, P2P applications and open-source software, enable non-commercial commons production of culture more than

others. For example, collaborative production, works that utilize fair use, and uses of public domain materials – are highly enabled by open networks and P2P applications. As new-media political economist Yochai Benkler puts it, "[a] pervasively networked environment…allows nonmarket production to play an increasing role in the information and cultural production sector" (Benkler, 2003, p. 4). Digital Rights Management (DRM) technologies limit our ability to copy or otherwise gain access to copyrighted content. This limitation interferes with fair use, as these technologies often treat all content the same, and thus effectively prevent access to content that could be used legally under fair use.

Anti-circumvention rules make it illegal to bypass or tamper with rights management technologies, even if the action of copying is itself legal. Specifically, the DMC "prohibits individuals from manufacturing, selling, or trafficking in technology, products, services, or devices that circumvent technology designed to control access to a copyrighted work" (Jeweler, 2004, p. 1). As Geist notes, "the effect of the anti-circumvention provisions is to effectively replace copyright protection with access controls" (Geist, 2005, p. 233). These technologies and their corresponding regimes of state enforcement, are already leading universities to "employ a DMCA officer to advise computer scientists and engineers whether they can engage in legitimate research" (Sohn, 2007, p. 11). Clearly the appropriation of commons-based cultural production is well underway. Limiting access to cultural artefacts deprives creators of the ingredients they need to create new artefacts.

Appropriating Circulation

While the mechanisms of production and reception are also being

appropriated, the media circulation technologies are most central to the concerns

of media conglomerates. We've already looked at the imposition of rules that

punish sharing of knowledge and culture; circumvention technologies are the

corresponding enforcement tools. A common form of DRM is media technologies

that limit the ability to copy or otherwise share media content. Perhaps more

disturbing than putting digital locks on media applications or content units, is the

use of privileged access to the physical layer of the Internet. Under the DMCA,

> purported copyright owners can directly contact Internet service
> providers (ISPs) or search engines and demand they remove
> questionable material without going through a legal process.
> Ultimately, this means that distributors and hosts can be held liable
> for copyright infringements if they fail to immediately comply with
> any take-down letters they receive. (Moore, 2007, p. 76)

This suppression of culture occurs without due process, and often without the

knowledge of the creator (Moore, 2007). These state-enforced DRM technologies

and policies push the circulation of culture into circuits controlled by media

conglomerates and their partners. When people are prevented (either explicitly or

implicitly) from autonomously sharing cultural works, there is a systemic pull

towards the circuits operated by (corporate and state) sanctioned distributors.

Appropriating Reception

Controlling the point of media content reception is central to the push by

major copyright owners to control and charge for content based on usage. DRM

technologies are often:

linked to a database which enables the automated collection and exchange of various kinds of information among rights owners and distributors about the particular people who use their products; their identities; their habit and their particular uses of the digital material subject to copyright. (Kerr, 2005, p. 174)

Kerr further notes, that "what DRM really manages is people -- by collecting information about them 24/7 through automated, often surreptitious surveillance technologies" (Kerr, 2005, p. 177). DRM is oriented towards controlling how, when, and under what circumstances we access cultural works. DRM is part of a desire, on the part of media corporations, to define reception based on the desires of commercial interests, rather than the interests of artists or citizens. This control through surveillance connects well with the forces enclosing the space layer of the Internet (see chapter 5). We will see this idea of commodity property regimes essentially producing users, or *participant commodities*, on the space layer, where these dynamics are more profound.

The commercial appropriation of cultural production, circulation, and reception marks a major incursion into some previously uncommodified spaces. Today "intellectual property is now in and on the desktop and is implicated in routine creative, communicative, and just plain consumptive acts that each of us performs every day" (Boyle, 2003, p. 43). As more and more of the tools we use on a daily basis come to us tethered to DRM agents, "DRM will be ambient, ubiquitous, and omnipresent" (Kerr, 2005, p. 179). Media technologies embedded with distribution-locks effectively give the media industry the keys to culture. The process outlined above is leading to a communications architecture

designed to cater to commercial interests rather than democratic priorities. As

Lessig notes,

> architecture is a kind of law: It determines what people can and
> cannot do. When commercial interests determine the architecture,
> they create a kind of privatized law. (Lessig, 2006, p. 77)

The evolving and advancing media technology architecture operates as a

centripetal spiral of enclosure, continually drawing the commons into the

commodity property sphere. This architecture embeds values, practices, and

modes of cultural production that shape social relations. These social relations

do not reside in some digital communication vacuum; the relations bleed to the

terrestrial – they bleed to the social totality (and visa versa).

Owning Culture

As we have seen, copyright legislation seems to develop, in part at least,

in relation to the demands of the media content industry – namely to enable and

enforce their dominance of cultural production and circulation. While

technological change in media production and circulation clearly impact copyright

policy, the political economy of media also generates unique relations of force

that act upon such policy and on the development of media technology. Media

technologies and ownership patterns are mutually constituted.

Contrary to the view of the new-media evangelists cited earlier, the

analysis by Klinenberg (2007), Curran (2003), and others shows that parts of the

"traditional" media conglomerates (content owners), are driving some of the

important technological and legislative changes that are shaping the content

layer of the Internet. Traditional media conglomerates have been able to continue

to dominate the emerging media system in part because their previous

investments, "economies of scale, privileged access to distribution networks, and

cross-promotional resources" reinforce, and are reinforced by, "high entry costs

in most media industries" (Hackett and Carroll, 2006, p. 7). Without intervention,

the conglomerates that dominate traditional media will continue in their attempts

to dominate online media, too, and no amount of evangelical optimism with

change that.

There may not be any technological reason why the Internet should be

enclosed, and it certainly contains properties (decentralized network) that

encourage openness. However, as Andrew Feenberg notes,

> Technical development does not point definitively toward any
> particular pattern. Instead; it opens branches, and the final
> determination of the 'right' branch is not within the competence of
> engineering, because it is simply not inscribed in the nature of the
> technology. (Feenberg, 1995, p. 9)

The Internet may have the potential to follow a branch that enables it to continue

as a decentralized network, but the economic support system for media

conglomerates can, and currently is, imposing an enclosure-based logic on this

medium. In some past cases, particularly radio, there was little technological

reason why the medium should not have been managed as a participatory

commons regime. Radio is now a relatively centralized medium in North America

because socio-political and economic forces, as well as social agents, shaped

the expression of radio. These same relations of force are acting on the Internet

today.

We have already outlined how content-owning media corporations impose a copyright regime and media technology architecture that reproduces their dominance; but these entities also utilize their profits in other ways. The Motion Picture Association of America (MPAA) reportedly paid a disgruntled employee from a P2P file-sharing indexer called "TorrentSpy" $15,000 to provide inside information, and so created a scandal over the fight between those who share culture, and the commercial interests attempting to enclose it (Kravets, 2007, 1). At the time of the scandal, the MPAA had an open copyright infringement lawsuit against TorrentSpy's parent company, Valence Media. If this act of corporate espionage were not enough, the employee claims that the MPAA also wanted to set up a fake file sharing site of its own, which we could infer would work to either put file-sharing services in disrepute or nab the users who signed up for the service. This attempted sabotage of highly-decentralized media circulation does not appear to be an isolated act. In 2007 another file sharing portal reported evidence that a company called "MediaDefender" had been "polluting file-sharing services with fake, decoy content" (Kravets, 2007, p.1). We might see this as evidence that commercial media interests are threatened, but we should also recognize the dangers of a highly organized, well-resourced industry, focused and intent on destroying commons-based circulation of cultural works.

Convergence

Besides sabotage of participatory media systems, legislative action, and technological fences, media companies also attempt to control cultural production by owning assets in the different areas of culture industries. As

Hackett and Caroll say, "today's watchword is 'convergence' – in terms of both the digital technologies which are merging previously separate media industries, and the expansion and interlocking of corporate media behemoths, national and globally" (Hackett and Carroll, 2006, p. 4). In additional to large conglomerates staking out dominant positions in the digital media environment, there is also a certain degree of convergence between ISPs, content owners, and digital media portals/applications. Sometimes convergence expresses itself as partnerships (ABC/Yahoo!), joint ventures (News Corporation/NBC Universal), and outright multi-layered ownership (AOL/Time/Warner) (Mayberry, 2006; FreePress, 2007).

While communication ownership convergence is far from complete, present trends suggest we can expect much more of this in the years to come. These institutional arrangements create strong economic incentives for Internet Service Providers to abandon net neutrality on the physical layer of the Internet (as discussed in chapter 3); ISPs would benefit financially from providing special high-speed Internet service for their own content and services and that of their partners, while slowing down that belonging to competitors and no-partners. The relations of force expressed through large media conglomerates and their offshoots are perhaps even stronger concerning the content layer of the Internet. While the cost of file-sharing is highly contested, it is still worth noting that the music industry claims lost revenue of $4.2 billion a year. (Graham, 2004, p.2). Even if that number is high, the point is that the content-owning corporations would gain huge profits if they can find or devise a scheme that prevents free content sharing. The recording, movie, and television industries are already in

talks with ISPs concerning how they might work together towards mutually

beneficial ends[8]. A representative from AT&T recently commented on working

with the media content industry to filter file-sharing:

> We are very interested in a technology based solution and we think
> a network-based solution is the optimal way to approach this... we
> are having an open discussion with a number of content
> companies, including NBC Universal, to try to explore various
> technologies that are out there. (Stone, 2008, p. 1)

In Canada recording interests including the Canadian Independent Record

Production Association (CIRPA) are calling for media files to have mandated

"water marks" that the ISPs could monitor and use to filter out copyrighted

content (Henderson, Ellis, Willaert, Kennan, & McKie, 2008). At the time of this

writing the UK government was considering cutting off Internet access to those

users caught sharing copyrighted material. The scheme would involve ISPs

monitoring and policing Internet traffic; ISPs that refuse to monitor would be

prosecuted (BBC, 2008). French president Nicolas Sarkozy recently made an

agreement with French ISPs, where ISPs committed to disconnecting "persistent

copyright infringers" from their networks (Lasar, 2008, p.1).

We are moving towards a system where instead of owning a copy of a

cultural artefact, we will be paying for access to one, and possibly charged rents

per use. This access regime fits very well with the relations of force governing the

"space" layer as outlined in the next chapter. The space layer largely extracts

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[8] ISPs initially resisted calls for them to be liable for the content that flowed through their
networks, but now use their potential ability to filter and block copyright infringing content as a
justification for bypassing net neutrality rules. Likewise, copyright lobbies now openly call for
ISPs to become filters of content, and thus support the destruction of net neutrality rules.
These two lobbies we once at odds with one another, but now have a common cause.

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profits by selling audiences to advertisers, a condition which could interact very

effectively with a pay-per-access copyright regime. The content user feedback

loop created by DRM technologies is also a potential intersection point between

enclosures of communications content and space. As we will see next, on the

space layer there is nothing more valuable than user ("participant") information.

CHAPTER 5: ENCLOSURE III -- SPACE

As we outlined above, traditional media content holders are shaping the content layer of the Internet in very dramatic ways. While the dynamics of the content layer certainly feed into the space layer, cyberspace also has its own unique relations of force, and the two interact with each other in mutual constitution. The space layer, often referred to as cyberspace, consists of online tools (web software applications), spaces (social networking sites, portals), and services (news delivery, information services). The cyberspace of the early Internet had a clear commons ethos, dominated by open-source software and open standards. The early commons ethos can in part be attributed to the relations of force and institutions involved in the initial constitution of the Internet: government agencies, educational institutions, community groups, and volunteer labour. Over time, commercial interests began taking control of cyberspace away from participants. While average web users remain active participants of cyberspace, the overall structure of the Internet, the architecture, is much removed from their grasp.

The new interactive media ecology is increasingly dominated by "online participatory media", those online spaces, tools, and websites where people interact with one another, and play an active role in "collecting, reporting, analyzing and disseminating news and information" (Bowman & Willis, 2003, p.9). As people migrate away from traditional media (print, radio, TV) towards the

Internet, online participatory media is fast becoming increasingly powerful and important (Schiller, 2007). According to the blog search engine Technorati, since March of 2003, the total number of blogs has grown from just over 4 million to over 112 million (Sifry, 2004, para 2; Technorati 2008, para 1). Furthermore, the popular user-generated video and social networking website YouTube "says its users view close to 100 million videos every day" (Compton & Comor, 2007, p. 37).

Among the most popular and powerful types of participatory media are "social networking" sites like MySpace or Facebook. These social networking websites:

> ...are used to display personal photographs, to provide links to favourite music, performers, film, and television sites, to update journal entries, to communicate with other users, and to build up social networks of 'friends' around shared interests, and even, in some instances, to arrange actual meetings. (Garfield, 2006, as, as cited in Beers 2006, p. 3)

In the period between September 2006 to February 2007, the number of visitors to the social networking website Facebook jumped 75 percent to 24.8 million worldwide and the number of visitors to MySpace.com grew 26 percent to 98.5 million visitors in the same period (Auchard, 2007). This surge in the popularity of these participatory media holdings is not isolated to North America; as of September 2007, the UK social networking website "Bebo" was the most popular website in the UK by the number of page views (Lunden, 2007, para 1).

The ubiquity of Internet access coupled with the popularity of participatory online media tools and spaces allows for highly effective networked

communication. There is huge social power available with the increased ability for nonmarket media production and distribution (Benkler, 2006). Effective memes[9] unleashed through distributed networks can spread insidious conscious-raising values and information to a profoundly large and diverse audience; memes can jump from network to network in multifarious viral transmission. Similar to the process where molecules speed up, increasing their kinetic molecular energy, and circulating out to larger areas when temperatures rise, so too does the spread of the broadly resonating meme. These networked messages can leap from personal communications to mass communication with ease (Bennett, 2003). Harnessing such distribution can allow oppositional groups to reframe important public issues, and even advance radical positions.

While online participatory media and decentralized networked communication do create new and exciting opportunities, we should examine the emerging and existing political-economic forces shaping online space. How, and by whom, is the online communication environment being shaped? What relations of force are acting on the space of the Internet? What implication does this have for, not only the contours of online communication, but also the social relations it will radiate out to the social totality? These questions cannot be fully answered in any one take, but should be a fruitful site of academic inquiry. Below we will point out some of the ways online space is now being structured, the forces implicated, and some of the associated concerns.

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[9] A meme is a piece of vocabulary, idea or a cultural unit that is transmitted between people easily, and resonates with people, on a almost visceral level.

The Participant Commodity

Recent buy-outs of participatory media enterprises show that corporations are eager to turn participatory media platforms into highly synergistic cyber-shopping malls. As cyber-enclosure moves forward, we risk commercializing not just journalism and information but the very spaces citizens use to debate, discuss and connect with one another. Many of the most powerful online media websites are owned by some of the largest media corporations. Fox Interactive Media recently spent $580 million to acquire MySpace.com (Delaney, 2006, as, as cited in Compton & Comor, 2007). Google, a large and evermore powerful media corporation, owns one of the most popular blogging platform: BlogSpot.com. Google also recently purchased Youtube, the most popular online video site on the Internet, for U.S.$1.65 billion in stock (Delaney, 2006, as, as cited in Compton & Comor, 2007). Yahoo, Microsoft, and AOLTimeWarner own other popular platforms. Media reformers and academics often focus on the centralization of traditional media, even though, considering the number of people that use MySpace, News Corporations' control of MySpace is perhaps even more powerful then every one of its holdings in traditional media.

While the commercial and concentrated ownership of online platforms is important, and deserving of more analysis later, we should acknowledge here that there is very real cooperation and open communication taking place on these spaces and tools. As Howard Rheingold reminds us,

> technologies and methodologies of cooperation are embryonic today, and the emergence of democratic, convivial, intelligent new social forms depends on how people appropriate, adopt, transform,

and reshape, the new media once they are out of the hands of engineers—as people always do. (Rheingold, 2002, p. 215)

To this, we interject that it also matters who is engineering these technologies, who and what forces are shaping the design of online space and tools in the first place. People do transform and shape technology, but do so in relation to existing technologies, institutions, organizations, and the coalesced relations of force in the social totality. Human agency plays a role, but the technological properties and social structures in society provide the very medium for which that agency is carried out (Mosco, 1999, p. 212). Technologies are malleable, but they bend most under the weight of inscribed logics and properties.

The use, shape and adoption of technology, is in part, determined by particular social dynamics within organizational forms. The organizations that can most effectively mobilize social labour, can also most effectively configure and adopt technology in their shadow. If commercial interests can mobilize labour more effectively than government agencies and other public benefit organizations, institutions, technologies and relations (the commons), then it is predominantly, or at least more so, in those commercial interests that technology will adopted, shaped, and used. This is not to say that cyberspace is not, and will not continue to be participatory. At issue is under what circumstances will that participation take shape – how are online spaces and tools, and thus to some degree our online participation, structured?

With current patterns of ownership and orientations, we tend to conduct online personal communications on platforms that we have little or no control

audience production. The media company dispossesses audiences of their labour by providing media content that is attractive to the audience, either intellectually or sensationally, via spectacle.

At the time of his writing Smythe was referring to the media he was familiar with (print, radio, television). However, this social relation has continued with the Internet despite its participatory nature. In keeping with Smythe's "audience commodity," online participants who are commodified by online media corporations and sold to advertisers and marketers are what I call the "participant commodity". The process of commodification operates similarly to audience commodification, with the major differences: 1) participant commodities are commondified while interacting with services, spaces, tools, and people online rather than only through consuming media content; 2) participant commodities provide the value with which they are being commodified. The latter merits some clarification. Producing audience commodities required traditional media companies to produce media content, in order to get our attention. In contrast, online media corporations are often simply providing a basic infrastructure, such as a social networking site, and the users are producing all the content themselves. The actual material on social networking sites, and tools, is made up of participant pictures, messages, videos and other personal information. Participant commodities are also willingly providing all the demographic and personal information a marketer could ever want. Yet the media corporations still control the architecture and reap the financial benefits for these activities. Put another way, this is analogous to workers at a factory bringing the materials with

them to work, and the factory owner providing only a building and the machinery with which to do the work. It is a new level of exploitation.

Increasingly, our online and offline social networks are merged with each other. Some of our contacts and activities might already live online, but increasingly our terrestrial relationships and activities find an online expression as well. In many ways our activities and relationships online and offline are interdependent; the division is melting. This dynamic has many implications, but of most importance to us here is that cyberspace activities are now much less a choice than a necessity of social life. While the "just turn it off" reaction to critical analysis of the Internet never held much relevance, it surely holds less with each passing day and each relationship merged in cyber and terrestrial space. The implications of these relational dynamics swell when we consider that in order to effectively engage in online activities/communication we are increasingly forced to make cerebral payments at every interchange. This is the defining dynamic of the ever-expanding cyber-enclosure. For example, Google, in addition to advertising on web searches, also keeps track of every search: "curiosity is monitored, producing a searchable database of the curious...before search engines, no one had any records of curiosity" (Lessig, 2006, p. 204). Google's email service "Gmail" advertises to its users while they read their email. What is most profound about it is that the ads are based on information in a user's emails (Lessig, 2006). Robots scan the email and certain ads are triggered by certain words. Lawrence Lessig puts this in perspective by comparing it to a TV that shifts advertisements based on what it heard you saying on the telephone. With

the imminent unleashing of 'rich media' advertisements coupled with wider adoption of voice over IP and online participant video, we can look forward to such a scenario in the not-too-distant future. As media companies now commodify our personal interaction and even our curiosity, one cannot help but notice the expansion of the commodity form to new strata of social life.

As social interaction increasingly moves to cyberspace, it becomes more a matter of subsistence to provide this "participant labour." As all forms of capital (social, economic, cultural) further migrate online, the power of media corporations will escalate, and citizens will feel they have little choice but to submit to the existing power relations (unless web users effectively resist). Some web users will resist this exploitation through employing digital amour, such as encryption software, IP masking, and ad blocking tools. One such tool is the already commonly used, FireFox "Adblock" add-on. The "Adblock" add-on, is an application one can download for the FireFox browser, and it will block most banner ads. The problem with these tools is that they are beyond most users' technical grasp and they require labour to find and install. Google on the other hand, has an architecture, a self-perpetuating system of participant labour production. Thus, when facing resistance from atomized users, Google and other media corporations will likely continue to dominate the web. As Smythe notes, "audience members may resist, but the advertiser's expectations are realized sufficiently that the results perpetuate the system of demand management" (Smythe, 1981, p. 244).

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As noted earlier, online spaces and tools can provide very real opportunities for empowerment; however, the real winner is the web enterprise, which appropriates participant labour, commodifies it, and sells it on the market, thus extracting surplus labour. Google's shopping search engine, Froogle, is an illustrative example. One might assume that Google would take commissions on sales of goods, or sell them to you directly. But contrary to this assumption, Google does not take commissions or fulfill orders through this service because it is us, the participant commodity, that is being sold directly to advertisers.

Marketers and advertisers consume us even as we are consuming. In some ways the online participatory media mimic "the false control offered by workers participation schemes, wherein workers decide how to accomplish the business mission, but, crucially, not what the mission is" (Chris Carlsonn, 1994 as, as cited in Witheford, 1996, p. 287). In reality the online spaces and services are structured to most efficiently produce participant commodities. Participant empowerment is most often a side effect of participant commodification, although, these side effects can create very real spaces for counter-hegemonic resistance.

Conventional logic says that advertisers are not buying participant commodities, but rather just online space. If advertisers are simply buying space, and now "clicks" or "impressions" rather than participant commodities, then all spaces, clicks and impressions would be viewed as equal (Meehan, 1993). In reality there are different levels of quality for spaces, clicks, and impressions, and rating is based almost entirely on the characteristics of the participants (Meehan,

1993). Take a look at any website trying to sell ads and you'll find a section devoted to up-selling the participant commodity. Up-selling will be based on desirable objectified characteristics as defined by advertisers: education level, occupation, salary, lifestyle. All of these characteristics are thinly veiled indicators of the desired participant commodities: consumers with high levels of disposable income and who engage in conspicuous consumption. These participant commodities are what are being sold — not spaces, clicks or impressions. As one example of the commercial value of the participant commodity: in December 2005 Google and Microsoft had a bidding war over the right to sell ads on Time Warner's AOL unit. Google won, agreeing to pay $1 billion for a 5 percent stake in AOL (Helft, 2007, p.3). Microsoft and Google are trying to outbid each other not for space on AOL web properties but for the participant labour that comes with it. The information AOL has on millions of AOL members is particularly attractive.

In line with other industries, participant commodity producers (media companies) are moving beyond the aforementioned mass measures, to selling individual participant commodities based on highly-specific scientific data. The culled participant commodity profiles allow media companies to resell participant commodities to consumers (advertisers and markets) with unique characteristics. Those who have superior participant data can re-purpose and market their participant commodities more effectively, and thus collect superior surplus value from participant commodity sales.

Facebook and Google are two examples of enterprises that push the limits in their drive to mine and manufacture participant commodities.

Facebook

Facebook is a social networking site with over 59 million users - and 2 million new users each week (Hodgkinson, 2008, p. 1). The site lets users easily share media with their "networks", keep track of each others' activities, and otherwise communicate and interact in various ways. One of the innovative, and now widely copied, features of Facebooks is the network "news feed". The news feed is a constantly updated list of everything a user's "friends" have done on the Facebook website. So if a users friend added a picture, posted a comment, or shared a video – it will be listed on all their friends' news feeds. Another innovative element of Facebook is that it lets outside developers add "applications," which are tools for any number of interests: video feeds from news organizations, online scrabble, music, favorite jokes, and thousands more.

While these services are innovative, they also mark a new commercial incursion into social life. The Facebook news feeds are not unlike a constant conversation with all of your friends. This is a great feature until one realizes that Facebook slides commercial appeals into personal news feed. This is the commodification of space not yet effectively commercialized: personal interaction. This is effectively another "accumulation by dispossession" in David Harvey terms – we once had an open, socially directed mode of communication with one another, now, at least in this evermore popular space of interaction, we are dispossessed of fully autonomous interactions. Add to this that all the data

that flows through the applications, profiles and services on Facebook, are mined and often sold to advertisers.

Facebook recently took the commodification of interaction one step further by launching a new ad service called the "Beacon". The Facebook Beacon system monitored Facebook users' activities on partnering websites and notified the users' friends about purchases made. Facebook founder Mark Zuckerberg described the Beacon advantage to advertisers this way, "you will be able to select exactly the audience you want to reach, and we will only show your ads to them. We know exactly what gender someone is, what activities they are interested in, their location, country, city or town, interests ..." (Zuckerberg, 2007, as, as cited in Schonfeld 2007, p.1). Coca Cola describes Beacon as a way to enable their brands to "become a part of the way users communicate and interact" (Carol Kruse, 2007, as, as cited in Hodgkinson, 2008, p. 1). In the future, Facebook hopes to use algorithms "to learn how receptive a person might be to an ad, based on readily available information about activities and interests of not just a user but also his friends" (Vara, 2007, p.1). Facebook also hopes to improve on their system so that they can forecast what products and services users might be interested in, before they have even expressed their preferences for such commodities (Vara, 2007 p.1).

It is not surprising that the Beacon both ruined a few Christmas surprises and outraged many when they realized the level of surveillance to which they were exposed. Although Facebook eventually bowed to public pressure and made this referral system only apply to those who opt in, it was later revealed

that Beacon continues to monitor Facebook users activities on the web even if they are logged out of Facebook, regardless of if they opt in or out of the Beacon service. Facebook may have misjudged its audience and taken privacy invasions a step too far for its users to passively accept, but this kind of surveillance and data collection is the norm with dominant new media companies. MySpace has its own "HyperTargeting" system described by Michael Barrett, Chief Revenue Officer for MySpace parent division Fox Interactive Media,

> [as] an ad platform that translates our massive amounts of self-expressed user data into highly targeted, interest-based segments, enabling us to better serve the exact right ad to the right person at the right time. (Barrett, 2007, as, as cited in McCarthy, 2007, p.1)

One of the key issues to take out of this new commercial incursion is that ultimate control is not with the participants, but rather the owners – something rather simple that was well understood with traditional media, but seems to have been forgotten with digital media because it is "participatory".

The "integrated commercialism" of the participant commodity producing system will, to some degree, shape users' subjectivity: if professional commercial appeals are integrated into even our personal communications, it seems likely to affect us in new and deeper ways. It also raises the question, how might we resist commercial forces if our (online) personal space and communications are infiltrated and largely shaped by commercial interests?

Google

The most successful online media company by most standards is Google. Google warrants additional attention here, as its success is largely attributed to it providing services that attract large audience markets and also developing the most effective advertising system to date. It is Google's ability to produce consumable participants through the integration of popular online tools, effective participant surveillance, and a sophisticated targeted advertising system that has made Google an industry leader. In short they are the most efficient at producing participant commodities. This is how David Vise and Mark Malseed, authors of "The Google Story", describe it:

> The Google Economy, in full regalia, also had a self-reinforcing effect: The more computer users who clicked on Google ads, the more money Web site owners would make. The more money they made, the more other sites would be willing and eager to add Google search and other technology to their offerings. The bigger the network grew, the harder it would be for anyone to challenge it. (Vise & Malseed, 2005, p. 129)

Since this synergistic system has produced the most profits, it perpetuates itself and the accompanying social relations. Google's recent increase in revenue more than doubling its rival Yahoo is largely attributed to Google's success in cornering the online advertising industry while Yahoo followed the misguided strategy of producing online media content (Mills, 2007). Google's investment in its participant commodity production apparatus now allows it to derive increased revenue streams due to its enhanced ability to *monetize clickstreams*. By having an unparallelled ability to reinvest in the means of production, and thus creating an even more efficient and powerful participant commodity production system,

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Google is able to maintain an edge over the competition. Google's chief

executive officer Eric Schmidt estimated that Google buys start-up web

companies every few days, and is quoted saying, "I think the pace [of Google

buyouts] will accelerate" (Auchard, 2007, p. 1).

Google recently launched "OpenSocial", which in some ways is a rather

open development system. OpenSocial, is a platform for building web tools that

can be used by a number of affiliated websites. The system is open in that

Google provides developer with access to the source code. The catch is that it

seems likely that Google will have access to all the data that flows through these

applications. This system, if successful, would effectively create a Google layer

of the Internet – a layer where tools are created by decentralized agents and

organizations, while the architecture, and most importantly, user data, will be

primarily under Google's control. The participatory (social networking) websites

that join this platform will provide web developers with participant, "profile

information (user data), friends information (social graph), activities (things that

happen, news feed type stuff)" (Arrington, 2007, p.1). To get companies to buy

into this model, Google will share user data: similar to the way their ad system

shares ad commissions with "affiliate" websites that display Google ads.

Google is also planning to come out with a service called Knol, that will

compete with one of the pillars of the commons space layer: "Wikipedia". While

Wikipedia is a non-profit, open-source, participatory encyclopedia, Knol will

similarly provide a user-driven encyclopedia, but it will allow participants to

generate revenue from their posts by permitting Google to display ads

(Monaghan, 2007). Of course, Google will get a share of these ad dollars, as well as the users' data. Like most of Google's services, it seems like a fair deal for those involved, but it also commodifies what was a commons-based practice. Like the English enclosure, this commercial sublimation will alter social relations: instead of contributing to a collectively managed and produced resource for public benefit, users will, at least to some degree, contribute and compete for individual financial gain.

Google's ability to buy and build online territory and launch new online tools, mirrors the power relations advanced during the terrestrial enclosure movement. During the sixteenth century, it was the landowner who most efficiently produced farm labour and thus farm commodities was most successful, and thus able to expand their holdings. Under present circumstances it is those who most efficiently produce participant labour and participant commodities who are most successful at enclosing online spaces and services. Google's revenue growth, much like all commercial media enterprises, directly corresponds to its ad revenue growth (99% of Google's revenue is derived from advertising and marketing) (Google.com, 2008). Traditional media were the gatekeepers of audience commodities for TV, radio, and print, whereas the new online media giants more effectively direct commodified Internet travelers towards highly-targeted advertisers. In this transmission to a new medium, a new level of interaction has been born, but the comodification of audiences has, for the most part, only deepened.

Persuasion Architecture

Surplus value depends upon factors related to consumers, labour, and capital markets (Mosco, 1996). The first two are primarily under the control of the media enterprise. The consumers of the "participant commodity" are increasingly demanding delivery of participant commodities that include detailed personal information. To satisfy these demands new media companies are rushing to buy up properties that include databases of consumer information (MySpace), or partner with marketing companies that can help develop a participant-commodity package useful to advertisers. These demands have also pushed new media companies to pursue development of extravagant technologies that aid in the harvesting of participant profiles. What is emerging is a kind of continuous panoptic feedback loop where participant information is constantly plucked from participant activity, matched up to personal information and previous activity, and then used as a direct assault to sell items based on highly personal, even sometimes subconscious psycho-social needs (Schiller, 2007). Perhaps what is most structurally significant in this dynamic process is that the participant's data is instantly packaged and sold to advertisers.

We might be inclined to believe that while online communications is structured, free navigation is still available for those who seek it out. To this we encourage readers to consider a point made by Edwin Baker concerning traditional media:

> ...advertisers in effect pay the media firm to gain an audience by providing the audience with something the audience wants, although not necessarily what the audience most wants. (Baker, 2002, p. 11)

As the above quote suggests, commercial media do provide content people want to consume – media corporations do need to provide something to lure people to advertising appeals. The point Baker makes is that, while we may like commercial media enough to settle for it, it doesn't necessarily produce what we would most like to have. In effect, commercial media are most successful when they most effectively deliver consumers to advertisers. An article that is critical and thought provoking might get a large audience, but a fluff piece might get a larger audience and also more effectively deliver that audience to advertisers. Fluff can often be cheaply produced, while also putting the audience in more of a buying mood in comparison to media that is more thought-provoking. As these calculations are repeated, there is a certain logic that regulates media content. This is relevant for us here because a similar dynamic is at play on the space layer of the Internet. The online space owner who most interests web participants will not necessarily most dominate the Internet; rather it is the enterprise that most effectively delivers participant commodities to advertisers who will most dominate. Thus, our consumer "choices" mostly shape new media offerings from within a menu already structured to the needs of advertisers.

In order to compete effectively, media companies must increase their exploitation of the participant labour in order to maintain the rate of capital accumulation. New and evermore invasive methods of participant labour exploitation are being unknowingly unleashed on citizens using the Internet.

Media companies are working with marketers to segment online participants into target groups, and "corralling your next online movement--by

controlling and limiting what's headed your way, in the form of packaged, personalized content" (Chester & Mierzwinski, 2006, p. 11). The marketing company *Future Now* boasts of something called a "Persuasion Architecture" that,

> provides a detailed process for persuading your visitors to take the actions you want them to take. Nothing is left to chance. You design persuasive paths based on personas to provide visitors with the information they want, when they want it, in language that speaks to their individual needs. (Future Now, 2004, as, as cited in Chester & Mierzwinski, 2006, p. 11)

The marketing industry is also investigating and refining measurements of responses to ads, including brain behaviors involving both cognition and emotion.

In the rush to produce the most malleable participant commodity, media corporations are not satisfied to wait for you to come to them--they want to be able to provide instant gratification for advertisers. Google has applied for a patent for

> ...a method by which an end user accessing the Internet via a wireless access point (WAP) would be served advertisements based on factors such as the geographic location of the WAP, a behavioral profile of users of the WAP, the vertical market served by the WAP's owner, or other predetermined criteria. (Newcomb, 2006, as, as cited in Chester and Mierzwinski, 2006, p. 15)

According to the head of the multimedia department at Nokia, 180 million Nokia phones will ship or be downloaded in 2008 with the ability to beam "location-aware content" (Kunz, 2007). A company called YuMe Networks lets marketers "dynamically insert video advertising into content that has been downloaded onto a viewer's PC, mobile device or TV" (Mills, 2007 para 2). Services like this beam ads to citizens in real time as they are trying to share, download content, or

communicate. Imagine the power these companies would have if they linked together. Using these technologies together, media corporations could beam you a real time ad on your phone while you are talking with a friend; the ad could be based on the conversation, location, and the known reaction you will have - based on emotional and cognitive brain research. This imminent future will give the media corporations the power to commodify, and in some respects control, our very social navigation.

The Synergistic Membrane

As cyber-enclosure deepens and widens we will find media companies more aggressively competing to better exploit online participants. As previously noted, the increasing market demand for resources, and the intensifying competition among labourers were major factors in the terrestrial enclosure. We can see evidence of this same tension in the urban setting of that period where:

> The rage for deer parks and the threat of poachers led to the closure of rights of way across their parks and their encirclement with high palings or walls; landscape gardening, with ornamental waters and fish ponds, menageries and valuable statuary, accentuated their seclusion and the defences of their grounds, which might be entered only through the high wrought-iron gates, watched over by the lodge. (Thompson, 1991, p. 41)

In some cases, enclosure was somewhat gradual, discrete and even symbolic. Fearing a participant revolt, we can expect a similar approach by the online media conglomerates in their drive towards cyber-enclosure. What these media giants are doing is creating a new kind of synergy, with prescribed circuits that less and less lead to the web outside properties owned by the parent company or

its partners. This is even more powerful than the synergy created by traditional media where one company owns and derives revenue from vertically and horizontally integrated media properties.[1] With this older synergy, corporations have tremendous power to reach and enter our minds with promotional directives, while also gathering multiple streams of revenue by re-purposing cultural commodities. The new media synergies also create new revenue streams. Instead of gaining revenue through products and services related to cultural commodities, online media conglomerates primarily take revenue streams in the form of advertising.

Unlike their traditional media counterparts, online media companies (although increasingly integrated with traditional media) may not control the access to the medium directly, as that would be the job of ISPs. However, they do control powerful "transmission nodes." Online media owners are not the gatekeepers to the medium, but they do have significant control over the flow of the participant commodity. Google, News Corp, and other holders of major web properties may not be part of a limited selection of channels, as cyberspace is essentially endless, but most Internet traffic flows as if they do. The brand loyalty they generate, and the significant start-up costs needed to develop anything on par with the sophisticated constellation of services they offer, creates a very high barrier to entry. The only recent start-up portals that have been successful have concerned themselves with niche services like the blog search engine "Technorati", or have found new ways to commodify users (like Facebook).

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[1] For a detailed outline of vertical and horizontal integration see Robert McChesney (1999), and David Croteau and William Hoynes (2006)

One recent study showed that only 20 domains (websites) capture 39 percent of all time spent online by U.S. users (Meattle, 2007). Considering that the Internet is technically an open medium, this is an amazingly high level of user concentration. MySpace, which is owned by News Corporation, commands an astounding 11.9 percent of U.S. users' time online (Meattle, 2007). Considering the USA has well over two hundred million Internet users, this kind of concentration of online website usage creates huge vectors of power (Internet World Stats, 2007). Moreover, media corporations continue to concentrate the ownership and control of online space through new acquisitions. In 2007, Microsoft bought a 5 percent stake in Facebook for $500 million, as well as online ad firm "aQuantive" for $6 billion. In early 2008, Microsoft announced plans to takeover one of the largest Internet companies in the world - Yahoo! Yahoo itself recently bought online office productivity software maker "Zimbra" for $350 million and ad network "BlueLithium" for $300 million; Google recently bought at least 11 major Web companies including a "microblogging" service called "Jaiku" (Hof, 2007, p.2). Traditional media are also acquiring online media; recent examples include CBS acquiring "Last.fm" in May for $280 million, and later "Dotspotter" for $10 million; and MSNBC's purchase of participatory journalism site "NewsVine" (Hof, 2007, p.2; Armstrong, 2007, p.1; Johnson, 2007 p.1). These large acquisitions have been taking place for several years, but the continuation of this practice makes it unlikely that online media ownership will diversify or decentralize in any significant way.

The above trends and statistics run counter to the common vision of the Internet as a vast, uncharted, chaotically integrated space. In fact, online media conglomerates have slowly developed enormous online portals with integrated circuits of participant commodity transmission, and vast constellations of nodes. As these media companies increasingly try to keep participant commodities within their own circuits, they now systematically block competing services and push traffic "toward preferred nodes of a company's or group of companies' proprietary network, be it print, broadcast, or online news provider, entertainment site, or retailer" (Compton & Comor, 2007, p. 32). Enclosing terrestrial land allowed landlords to increase their level of control over the means of production during the enclosure. In our cyber-enclosure, creating these "walled gardens" of online spaces and services allows new media giants to better control the means of participant commodity production. Keeping participants locked into one company's network of online properties not only allows the company to continually appropriate participant labour, it also allows new media companies to better profile, and thus, add value to participant commodities. Every stop along the integrated proprietary circuit provides an opportunity to sell the participant commodity to an advertiser while also growing personal dossiers of the participants.

By providing selectively-permeable spaces – permeable to owned properties (as well as incoming traffic), while nearly unassailable to certain competitors – these media conglomerates are creating "synergistic membranes". With channels to competing online properties increasingly blocked, and company

network nodes tightly bonded, major online media corporations are creating

semi-permeable membranes around company assets. From the users'

perspective, it is easy to get into these membranes, but harder to find a way out.

Participants have become reliant upon transmission points provided by

online media spaces and services. When these transmission points block,

degrade, or discriminated against outside online space, it creates a *de facto*

membrane between the participant and the global cyberspace. Thus, similar to

the way that semi-permeable membranes in biology only allow passage for

certain particles, these synergistic membranes effectively regulate traffic so that

few participants escape the conglomerate's compound of online properties.

There are three basic means of creating and enhancing synergistic membranes:

node development, node promotion, and *rival exclusion*.

Node Development

Mergers, acquisitions, joint ventures, and property development are the

most traditional and probably the most benign means of creating synergies.

Adding a new online property enhances the network and circuits by adding an

extra node and thus a greater flow of participant commodities in the network.

Adding new spaces, services and tools increases the depth of the network, and

thus, decreases the need for participants to leave a media conglomerate's

network of properties. Yahoo is a great example of an online media company that

has substantial and diverse media holdings. Yahoo has bought popular

participatory media tools like "del.icio.us", and "Flicker", while also developing its

own social networking space called "Yahoo 360". Adding these properties allows

Yahoo to be in a position to provide all the major media needs for participants, and thus engenders an integrated network of media nodes that feed traffic to each other, rather than their competitors. Facebook rapidly develops its own service and partners with other organization when it is mutually beneficial. In a sense, Facebook operates as its own private web by allowing companies to build applications on top of its platform. So far, Facebook has not purchased other properties, but it is still a relatively new company.

Node Promotions

Node promotion is another key ingredient of synergistic membranes. Node promotion is the practice of using existing properties to promote other properties in the network. A good example of node promotion is the way Google now promotes Youtube videos in its "Google Video" search. Google's video search only searched Google videos in the past, but shortly after buying Youtube it started including Youtube videos in its search, thereby increasing traffic to its new node. Google then promotes its "iGoogle" service through a graphic displayed on the Youtube website. Considering these two websites are easily in the top tier of most popular sites on the Internet, there is substantial traffic at issue with these node promotions. When we consider that iGoogle presents a prominent link to its Gmail service, and its Gmail service promotes Google's "Picasa" online photo service, we can quickly see a vibrant network of corporate owned nodes. Each time a participant is encouraged to click on a promotional node, it decreases the vibrancy of the "outside" Internet. Each node promotion is a structural discrimination against free and open online navigation, as well as

competing services. As each node in a corporate network becomes more popular, it animates the entire network, creating a traffic circulation system to which it is difficult to intervene.

Rival Exclusion

The third contributor to synergistic membranes is rival exclusion -- the blocking or degrading of access to competitor services, spaces, or tools. In the spring of 2007 MySpace.com banned all of the rival company Photobucket's videos and other material on MySpace.com, claiming "some of the slide shows violated MySpace's no-outside-advertising policy" (Menn & Semuels, 2007). Blocking a service that is very popular among users was a problematic policy, so MySpace later bought Photobucket and lifted the ban. Photobucket went from being a breaking point in MySpace's circuits to a valuable transmission node. MySpace also banned reference to videos from another video site called Revver. Revver co-founder Oliver Luckett and other competitors attribute this practice to MySpace seeing these companies as competitors, since MySpace offers its own online video services. Another example of rival exclusion can be seen in the recent decision by Google to stop posting links to rival map applications provided by Yahoo, and MapQuest. Now when participants search for a place using Google's search engine they are only shown Google maps (Schofield, 2007).

As outlined above, online media conglomerates are developing extensive constellations of online properties, promoting network nodes and excluding rival services: In the process they are creating enclosed synergistic membranes. Developing a better understanding of the forces that are creating synergistic

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membranes, as well as possible alternatives, remain a crucial tasks for media and information society scholars. These fortified zones of the Internet are an expression of the social relations between participants and the owners of online spaces, services, and tools. The success and expansion of online media corporations lies in the scientific management of participant commodities. Media corporations are competing amongst each other to increase productivity in part through new levels of participant labour control, and more targeted participant labour tasks. The drive to expand the realm of participant commodification to new levels of time and space is indicative of online media companies drive to increase productivity. As described earlier, new mechanisms are being hastily developed in efforts to make participants available to perform labour at any place and time, in fact at the places and time defined by advertisers and marketers. The restriction of online social navigation is emblematic of the antithetical relationship between online participants and the online space, services, and tool-owning online media corporations.

As we delve into an "always on" media ecology we should be wary of how media conglomerates are structuring online navigation, and how this affects our terrestrial social navigation, our agency, and the social totality. If we allow cyber-enclosure to advance unabated, we may want to call it by a different name: the mental-enclosure. As commercial media production models expand to the production of technology, collective space, personal tools, and personal communication, it is a crucial moment to revisit Dallas Smythe's "audience commodity". The transfer from operating under a commons ethos to participant-

commodity production relations is reminiscent of the changed relations between villages and landlords prior the to final stages in the English enclosure.

As citizens further move from being traditional media audience members to online media participants we can expect the economic value of participant commodities and its apparatus of production to intensify, further deepening and widening participant commodity relations. Increased investments in online properties, node promotions, and rival exclusions by large media conglomerates are a sign of the increased value of participant commodities. The synergistic membranes created in efforts to better appropriate and extract participant labour, not only concentrate power, they also limits citizen exploration and investigation – free inquiry. If the terrestrial enclosure in England provides any insight into the process of cyber-enclosure, it is that propertied relations further embed and expand into the social fabric of society as they are further entrenched in daily life. It is our task to provide an alternative to this enclosed, sheltered, repressive media system created by the new media conglomerates.

We have already seen regimes on the physical and content layer coming together to push for ISP filtering of the Internet (the end of net neutrality). Dominant regimes on the space layer are, for the time being, fiercely resisting ISP (physical) control of the Internet. It is clear that while Google and other new media giants will be able to pay the rents for the Internet fast lane, and will likely remain dominant players, they will essentially lose much of their power to define the structure of the Internet. However, there is a good chance that if regimes dominating the space layer sense that net neutrality is lost, they will quickly begin

to partner with and support the regimes dominant in the physical layer, and likely the content layer as well. In the competition of enclosures, the winner quickly makes new friends. The more species of enclosure find commonality, the easier they find it to exclude. Invading our personal and collective privacy is a common goal, which forces of enclosure on every layer are pushing. The physical species of enclosure pushes sell our bandwidth based on specific usages, content species push to sell our access in particular settings, space species push to sell our participant labour and our particular social navigation to advertisers. This commonality could produce a bonded confluence of force, creating a nearly impenetrable trajectory of enclosure. We already see the lines crossing in each direction: online space regimes are buying physical infrastructure (Google is purchasing Wireless Spectrum), physical regimes are purchasing content regimes (Rogers Cable bought A-Channel), content regimes are acquiring space regimes (NewsCorp bought MySpace).

This merging of layers erodes the competitive restrictions between communication layers, and creates the relations of force for a perpetually expanding communication enclosure – and as these relations bleed to the terrestrial, we see a recipe for unremitting enclosure in the social totality. We have the ability to resist this meta-enclosure, but it involves citizens making choices consciously and collectively. We can not make these choices as isolated individuals (consumers), as large relations of force shape the very consumer options available to us. We need to make and enforce rules that shape the menu of choices available to us.   A key effort in this regard is for civil society to provide

a meaningful insurrection in the development of cyberspace, the goal of which would be to revive the communication commons.

CHAPTER 6: COMMUNICATION COMMONS REVIVAL

As discussed in the previous chapters, forces of enclosure reproduce

through an integrated feedback loop, the cycle of enclosure. As people become

more reliant on commodity property regimes (corporations) for their cultural and

social needs, corporations acquire more force (capital) with which to push for

deeper and wider enclosures. However, new technologies, create space for new

social logics to take shape, perhaps, a commons logic that can act as a

countervailing force against enclosure. While some social forces are stronger

than others, the Internet remains a technology that is mutually constituted by

agents, institutions, organizations, practices, and technologies. As Kate Milberry

notes, "…the Internet is a social construction that turns upon human agency in its

ongoing development, [and] opportunities for contestation and change exist"

(Millbery, 2006, para 4).

In this chapter we will explore some of the existing opportunities available

to expand the communication commons at the physical, content, and space

layers of the Internet. We will investigate some of the key alternatives to

communication enclosure, including municipal/community-based Internet

provision, the Creative Commons, and open-source software. What binds these

communication commons regimes together are the defining characteristics of a

commons (as outlined in chapter 2): cooperative ethos (shared usage, mutual

aid, moral reciprocity, self-governance, and fair distribution of benefits), a

community/public service ethos, assets held in common ownership, and decentralized participatory governance. Taken together, these regimes mark the potential for a communication commons revival. This revival represents not only a form of resistance to enclosure, but more importantly, it creates space for individuals to imagine and live out alternatives to a society dominated by commercial interests. What follows is not a detailed map of the commons ecology, as such merits a text in itself, but rather, a survey of several commons regimes blossoming on the different layers of the Internet.

Commons Revival: The Physical

When we explored the enclosure of the physical layer of the Internet, we found that net neutrality is a highly-contested regulatory safeguard. Large telecommunication corporations are lobbying governments to allow them to operate networks as a commodity rather than as a 'common carrier' based service. Net neutrality is, however, actively defended by a diverse coalition of public interest groups. There is even potential to strengthen rather than weaken net neutrality rules.

The U.S. net neutrality debate began to heat up in early 2006 as a House Energy and Commerce Committee bill (HR 5252) was tabled, which included provisions mandating net neutrality. Major ISPs, including AT&T, Verizon, and Comcast, lobbied hard to remove these provisions from the bill, while civil society groups like FreePress and the Center for Digital Democracy began rallying public support for net neutrality. In the Spring of 2006 a coalition of consumer and public interest groups calling itself the 'SavetheInternet.com Coalition', launched

a campaign to protect net neutrality . This coalition eventually grew to include 850 groups, including the National Religious Broadcasters, the Service Employees International Union, the American Library Association, Educause, Gun Owners of America, Future of Music Coalition, Parents Television Council, and the The American Civil Liberties Union (ACLU). The awareness raising tactics of this group led to more than 1.5 million Americans contacting their representatives urging them to support net neutrality (SaveTheInternet.com, 2007, para 1).

Over the following summer (2006), hundreds of web users posted videos and blog entries encouraging fellow citizens to help save net neutrality. As the Senate's August recess drew to a close, citizens supporting net neutrality rallied in 25 cities across the U.S., delivering SavetheInternet petitions to their senators and urging them to support net neutrality (Broache, 2006). This citizen-led movement would later be described by Salon.com as "a ragtag army of grass-roots Internet groups, armed with low-budget videos, music parodies and petitions" (Reilly, 2007, para 1).

The HR 5252 bill died with 109th Congress and battle for net neutrality continued.[11] On December 28th 2006, AT&T officials agreed to adhere to network neutrality provisions as part of their $85 billion merger with BellSouth. The AT&T agreement was dubbed by SaveTheInternet.com as "A Victory We Can Hang Our Hats On" (Scott, 2006, para 1). The AT&T clause provides a verifiable

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[11] Because the bill HR 5252 did not pass before the end of the end of 109th session of Congress, legislators would need to start legislative process over with a new bill if they wished to have it passed.

definition of net neutrality that public interest groups can use to maintain net

neutrality in other contexts, and to achieve further policy gains. In early 2008,

another important step was made when FCC Chairman Kevin Martin announced

that he was "ready, willing, and able" to take action against practices violating net

neutrality (Burrows & Kharif, 2008, para 4). At the time of this writing a bill called

Internet Freedom Preservation Act 2008, which would protect net neutrality,

awaits passage in congress. Public interest groups are working to get enough

sponsors to make the bill law.

Net neutrality advocates used social networking sites, online video, as well

as traditional organizing and lobbying strategies to save net neutrality. The

outcome of this net neutrality battle is remarkable considering that U.S. phone

and cable companies spent more than $100 million on their campaign to roll back

net neutrality (Hearn, 2006). Besides providing inspiration for further public

interest gains, the movement to save net neutrality has also set off a reciprocal

force that is now systematically challenging those commercial forces vying for

control of the Internet. A countervailing force, challenging corporate ISP control

of the Internet, is evidenced by the recent devaluation (drop in share value) of

Sandvine Corp., a company that specializes in ISP filtering technologies.

According to Sandvine's website, it helps ISPs,

> better understand subscriber behavior...classify applications
> running on your network (for example, voice over IP, gaming, video
> streams), guarantee service levels and create profitable tiers for
> multiple broadband services. (Sandvine, 2008, para 1)

One industry analysts asserts that the "spectre of new Internet neutrality rules is causing cable companies to hold off on purchases from Sandvine" (Avery, 2008, para 11). It appears that the SaveTheInternet movement successfully dissuaded telecommunication companies from investing in technologies that would enable further communication enclosures. Accordingly, Sandvine's sales are down 88 percent in the first quarter of 2008 in compared to the same quarter in 2007 (Avery, 2008, para 12). While Sandvine's troubles are caused by many factors, the movement to save net neutrality is a key one.

Taking Back the Wires

Net neutrality is an important factor in the management and social dynamics of the Internet. However, in the long term, the most important element of physical Internet governance is ownership. As we noted in chapter 3, the push to abandon net neutrality did not surface out of a social vacuum, but rather its appearance corresponds with the rising centralized ownership of the physical layer of the Internet and associated relational forces. With or without enforceable net neutrality rules, ISPs still maintain monopolistic control of the Internet, and thus, have the monopoly profits to invest in further enclosures. The way to alter this arrangement is to develop public and community based Internet service providers. As one community Internet activist aptly put it, "the only reason they are able to shape bandwidth is because they own the infrastructure. If the community owns the infrastructure, that's how you're going to get net neutrality" (Phone Interview, February 24, 2008).

Utilizing existing public communication resources, some municipalities have built municipally-owned Internet services. Many municipalities own high-speed fiber networks that they can utilize relatively easily for Internet service provision. These networks are in place to provide communication conduits primarily for emergency services. Municipal network assets are attractive candidates for Internet provision as oftentimes the amount of fiber laid far exceeds the demand from municipal sources. Besides the excess capacity available, some municipalities opt to provide Internet over their network because they want to provide access to parts of the population (geographic, low income) not currently served by commercial ISPs. For example, the city of Buffalo, Minnesota decided wanted to provide Internet access to local residents, as so approached local commercial providers. As city administrator, Merton Auger notes: "We begged Qwest and the local cable company [to offer broadband services]...but they said it was not even on their radar" (Blackwell, 2002, para 5). The city already had a fiber backbone network, so they connected wireless transmitters to various points in the city, and residents were able to access the Internet using wireless receivers.

Examples of municipalities taking back the Internet are far too numerous to detail here, but we will outline two notable examples. In 2001, the city council in Fredericton, New Brunswick led an effort to:

> aggregate public-sector, university and business demand and created e-Novations, its own fiber carrier, then launched the Fred-eZone wireless network offering free connectivity across the city. (Intelligent Community Forum, 2008, para 5)

The city now provides access to their fiber backbone and a city-owned organization handles installation and general services (Barratt & Shade, 2007). The e-Novations project is a cooperative model where the twenty-two kilometers fiber network interconnects partners with each other, community members, and the wider Internet (Powell & Shade, 2006, p. 387).

Another interesting project is OneCommunity, based out of Cleveland, Ohio. OneCommunity is a non-profit cooperative of partnering organizations, including universities, the local public library, the municipal government, the public transit operator, and local businesses. OneCommunity is more of a hands-off system, where the city provides the network, but wireless access points are autonomously organized by the partnering organizations. According to the OneCommunity website, they expect to soon connect more than 1,500 sites in 22 counties (OneCommunity, 2008).

In the United States, telecommunication companies are pushing back by spending millions on state-level lobbying efforts to make public Internet provisions illegal (Klinenberg, 2007). However, many municipal Internet projects continue in the places where it is legal. Hundreds of cities are currently debating strategies to offer public Internet (Daggett, 2007). If municipalities can be catalyzed, municipal Internet has the potential to become the dominant form of Internet provision. As of mid-2006, more than 650 U.S. cities own their telecommunications systems, and thus, have the potential to offer municipal delivered Internet (American Public Power Association, 2006, as, as cited in Daggett, 2007, p. 3).

The Wireless Commons

In addition to municipal networks, there are also autonomous, community-based, Internet service providers. Some of these new community networks provide the same last mile Internet services as the big telecommunication corporations, but are non-profit, community-based, and community oriented.[12] Other community network providers focus their efforts on enabling community groups and individuals to share their existing Internet access.

Many community networks use unlicensed wireless spectrum to deliver Internet access. When spectrum is unlicensed, it can be openly used by any compatible devise, including most prominently, laptops (Gow & Smith, 2006). Most wireless Internet technologies use the IEEE 802.11 standard on the 2.4 GHz or 5 GHz band of spectrum (Gow & Smith, 2006). Essentially, any device with a wireless network card can tap into a connection that is in range of a signal on the above frequencies. Connections to the Internet are often established through a wireless router connected to a standard home or business cable Internet connection. If signals connect together with many other connection 'nodes' (wireless routers), an area can have a wireless mesh giving access to the entire covered area.[13]

Community-based wireless or "community wireless networks" (CWN), are often managed by citizen collectives or small non-profit organizations with limited

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[12] One example of community-based, Internet provider is Wireless Nomad in Toronto. Wireless Nomad is a non-profit, co-op ISP.

[13] Vancouver-based "FreeTheNet" provides ubiquitous access to the Internet for most of a downtown neighborhood (Gastown) through a wireless mesh network of routers placed at local businesses and homes.

resources. These regimes usually operate through cheap wireless routers and open source software. In many cases, community wireless networks simply make it easier for local business and residents to share their Internet access with customers or friends. Not unlike the early exploratory/amateur and radical use of radio by an earlier generation (Kidd 1998), CWN projects are often innovative, exploratory, and participatory. Community wireless projects are operated as a public service, and usually developed in opposition to the exploitive orientation of commercial ISPs. As Community WiFi researcher Alison Powell writes:

> The geek response to the enclosure of the Internet was to find a way of hacking the system: of using technological means to circumvent the enclosure of an open system of communication. As the inherent openness of the Internet began to be in question, WiFi technology offered an easily accessible means of hacking the means of accessing the Internet. (Powell, 2007, p. 24)

As the above quote suggests, the orientations and principles of CWN projects directly embed and promote commons values. CWN principles include "collaboration, participation, consultation, open access, transparency, democracy and a regard for the public interest" (Middleton et al., 2006, 14). One of the founders of Wireless Nomad, a community Internet project, detailed their explicit approach to managing their organization: "selfish user aims are being denied...no one is allowed to rat out, no is allowed to not share...everybody has got to contribute" (Damien, 2007, as, as cited in Wong, 2007, p. 18). In the above quote, Damien is referring to the Wireless Nomad policy mandating that every one of their users must share their wireless signal with the local community. Community Internet regimes like Wireless Nomad create an important social force when we consider that there are an estimated

350 such projects in the United States alone (Tapia & Oritz, 2006, as, as cited in Powell, 2007).

These community wireless networks are a newer iteration of the community 'freenets' of the 1990s.[14] Much like the freenets, many of the groups providing community wireless networks are volunteer-based, transient and chaotic (Wong, 2007, p. 7; Phone Interview, February 24, 2008). While some freenets are still in operation, most have either reduced their services or shut down completely. As Donald Gutstein explains,

> Instead of challenging corporate domination, community networks and their national association, Telecommunities Canada, were largely integrated into the corporate-political system, as providers of access to lower-income and rural Canadians, people of little interest to the commercial ISPs that appeared on the scene a year or two after the community networks went on-line...community networks were cast in the role of introducing Canadians to the Internet and whetting their appetite for more -- at least those who could afford commercial access rates. (Gutstein,1999, p. 261)

Today's community wireless projects help create markets for wireless Internet, and are at risk of being overtaken by large telecommunications corporations, as freenets were. For example, large for-profit aggregators and carriers in Montreal are already adding hotspots and other forms of wireless Internet access, while the local CWN project, Île Sans Fil, struggles to sustain itself (Powell & Shade, 2006).

To avoid the fate of freenets, community Internet regimes will need to network with other commons regimes, especially those that complement their

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[14] Freenets are community based Internet providers that usually offer services for free, or on a sliding scale. Donald Gutstein (1999) discusses how these former pillars of Internet service faded away once the Internet service delivery market proved profitable.

operations. One of the best ways to maintain the dynamic relations of autonomous community networks is to anchor these regimes to a commons-oriented municipal or state institution. A linked project between community-based wireless providers, and municipal institutions, provides the public resources and infrastructure needed to compete with commercial ISPs, while maintaining the community dynamics and civic engagement provided by community wireless projects. Some wireless projects, such as CUWiN in the City of Urbana, Illinois, are moving in this direction. Similarly, FreeTheNet, a Vancouver-based wireless collective, recently requested a partnership with the city of Vancouver. Building connections between community wireless projects and municipal agencies is an experiment, but social-techno experiments are exactly where community wireless activists most thrive.

Commons Revival: The Content

Much like the forces of enclosure, commons relational forces are strengthened and amplified when reinforced on more than one layer. One example of a physical Internet focused regime, also acting on the content layer, is the Île Sans Fil community wireless project in Montreal. Île Sans Fil has created software that "displays unique content at each hotspot" (Powell & Shade, 2006, p. 391). These hotspots provide autonomous spaces where artists can display their work independent of commercial media interests. Put in context with the efforts of large media companies these local spaces remain important but limited. However, there are various cultural commons regimes directly challenging commercial media conglomerates in other ways. Cultural commons regimes

challenge forces of enclosure by challenging restrictive copyright legislation and creating common-based media licensing (Creative Commons). These cultural commons initiatives provide a space for new experimental forms of cooperative media production, and thus, a lived alternative to media production and distribution based on commercial imperatives.

Copyright from Below

Growing awareness about copyright restrictions as described in chapter 4 has led some to call for copyright reform. Copyright reformers demand the removal of anti-circumvention rules, broader fair-use rights, and shorter copyright terms. While the copyright reform movement is not nearly as visible as the movement to save net neutrality, there are signs that this is changing. Several public interest groups in the U.S., including the Electronic Frontier Foundation, The Center For Digital Democracy, and Public Knowledge, are now working towards copyright reform. While this movement currently simmers behind the scenes in the United States, Canada recently witnessed a spark in copyright reform activism, which could be a sign of things to come in the U.S. In December 2007, Canadian copyright reformers found out that new copyright legislation (Bill C-60) would soon be introduced to parliament. Bill C-60 was to have similar provisions to those of the U.S. *Digital Millennium Copyright Act* discussed in chapter 4. Local protests ensued: over 35,000 people joined a copyright reform group on Facebook, an act which led to national media coverage (Fair Copyright for Canada, 2008). The Bill was delayed, reportedly because the "chorus of

angry voices was too loud to ignore" (McMurdy, 2007, para 8). As of this writing,

Bill C-60 has not been brought before parliament.

One catalyst for the copyright reform movement is the increasingly

prevalent practice of media sharing through digital networks. Now that people

have become accustomed to these cultural sharing practices, especially young

people, copyright policy resonates on an almost visceral level. As popular

technology blogger and copyright activist Cory Doctorow put it, "the Internet has

developed its own immune system now and when it's attacked, it will be

defended" (McMurdy, 2007, para 17).

The "immune system" that Doctorow refers, is animated by cultural

producers who understand that copyright legislation along the lines of the *Digital

Millennium Act* can limit their ability to interact with the culture commons. More

specifically restrictive copyright policies can severely limit access to commons-

based copyright systems like Creative Commons, which provides a reservoir of

freely available cultural artefacts.[15]

Started in 2002, the Creative Commons (CC) license system allows

artists, both professional and amateur, to copyright their work with as many

restrictions as they choose -- including the ability to un-copyright works

completely.[16] According to their website "Creative Commons provides free tools

that lets authors, scientists, artists, and educators easily mark their creative work

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[15] As discussed in chapter 4, digital rights management (DRM) software often limits access to cultural works that can used under fair use or Creative Commons. As also noted previously, DRM software is reinforced by the Digital Millennium Act's anti-circumvention rules.

[16] As outline in chapter 4, current U.S. copyright law stipulates that cultural works are autonomatically copyrighted. Creative Commons provides an easy way to put works in the public domain or other limits on copyright restrictions.

with the freedoms they want it to carry" (Creative Commons, 2008). This system was inspired by the Free Software Foundation's General Public License (GPL), which is used primarily by free and open-source software (FOSS) developers (discussed below).

Creative Commons was built on the GPL system, but applied to cultural works rather than to software. Creative Commons allows cultural producers to easily add an individually defined copyright badge to their work (usually a small graphic). These badges provide a clear indication of the specific copyright restrictions (or lack thereof) for other cultural producers and users. This easy-to-use copyright system helps creators avoid the automatic copyright license imposed on their work by the copyright policies detailed in chapter 4.

Commons-based licensing systems like Creative Commons play an important role in breaking down the divisions between producers and users of culture. Some consider this break to be a new category of media content producers/users called "produsers". According to Axel Burns, who coined the term "produsers," the "traditional value chain of producer-distributor-consumer has condensed to a singular point, the produser, interacting with and potentially enhancing existing content" (Bruns, 2007, p. 5). Thus, through Creative Commons and other commons-based licensing systems we now have produsers with "fluid roles" and perpetually-unfinished cultural artefacts (Bruns, 2007).

While cultural production has always been a collective process involving production ingredients from our collective cultural heritage, Creative Commons further enables (or perhaps re-enables) and encourages this mode of collective

cultural production. For example, Creative Commons licensing has been found to be a useful and enabling tool for those involved in collaborative cultural production using "wiki" software. Wiki software and spaces enable co-production of content that is collectively owned by all participants (Milberry, 2008). This collaborative authorship makes it difficult to decipher who owns the copyright of works produced, and by providing a workable solution to collective authorship, Creative Commons has been found to enable such wiki-based collaborative productions (Kim, 2007).

Creative Commons also makes collective production of culture explicit. Therefore, Creative Commons operates as a pedagogical device, creating a commons consciousness. A recent study suggests that CC is at least conducive to, if not engendering, a commons consciousness. The study found that among CC users, 51.8 percent report that they "licensed their work under CC licenses because they believed in sharing" (Kim, 2007, para 45). Rather than conceiving and distributing cultural artefacts as commodities, Creative Commons (CC) encourages the production, circulation, and reception of culture as a continuous and shared process.

While the commons elements (sharing, collective ownership) of the Creative Commons license system are voluntary, according to a recent survey of CC users, over 80 percent of the CC-licensed works permit derivatives – meaning they allow others to build upon their cultural artefact (Kim, 2007, para 30). More importantly, the vast majority of respondents utilized the non-commercial and "share alike" elements of the license (Kim, 2007). Opting for

non-commercial restrictions means that produsers are free to use the cultural artefact for only non-commercial purposes – commercial users need to get permission from the copyright holder. The share alike restriction stipulates that anyone who uses the work must share their output with the same (non-commercial) license – thus we have a system that perpetually reproduces and broadens the non-commercial and non-proprietary spirit of the culture commons.

The Creative Commons license to share, combined with the ubiquitous decentralized networks, creates an environment with far less *distribution friction* than that of the traditional commercial media. While many cultural producers and users do not yet use Creative Commons, it is becoming more popular. As of 2007, there were an estimated 60 million Creative Commons licensed cultural artefacts on the Internet, and CC use is still increasing (Cheliotis et al., 2007, p 6).

Commons-based licensing is not limited to cultural production or free and open source software. In the U.S., the Creative Commons group also recently launched a new project called the 'Legal Commons' that will "collect and make available machine readable copies of government documents and law" (Lessig, 2007, para 5). A similar and overlapping movement to Creative Commons is the 'Open Access' movement, which pushes for free access to research and information. According to the Budapest Open Access Initiative, the Open Access movement is focused on making research and information freely available,

> ...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, 2008, para 16)

While Creative Commons is primarily focused on cultural production in general, the open access movement focuses on institutional and academic research. One open access project, the Public Library of Science, which works with over 30,000 scientists from over 180 countries to make "scientific and medical literature a freely available public resource" (Tong, 2004, p. 24).

There are a plethora of open access, Creative Commons and Open Source projects and movements, all of which are attempting to undermine the culture-as-commodity system described in the chapter 4. Considering the viral nature of commons-based licensing systems, these projects can potentially embed commons logics into new social spaces. One such example is the recent declaration of support for open access by the Organization for Economic Cooperation and Development (OECD) (Doyle, Gass & Kennison 2004). In an unprecedented move, Yahoo! also recently announced plans to allow users to employ Creative Commons licensing in their huge menu of online spaces and tools (Lessig, 2007, para 6). Considering that many of the dominant new media corporations claim automatic ownership over all content that flows through their properties, this decision marks a major step forward for Creative Commons advocates. If Yahoo! follows through on this announcement, "4 out of the 10 biggest websites in the world now integrate with Creative Commons"(Jamendo, 2007, para 15).

While some (corporate/Big) media technology companies are embracing open standards, the communication commons is still on the offensive against enclosed media technologies. The Free Software Foundation runs the "Defective By Design" anti-DRM (Digital Rights Management) campaign that is "targeting Big Media, unhelpful manufacturers and DRM distributors" (Free Software Foundation, 2008, para 2). These campaigns seem to be having an effect, as DRM, once considered a key tool in the content owners arsenal, now seems to be falling out of favour. For example, many of the largest book publishers in the world recently announced that they have removed DRM technology from their digital books. A spokesperson for Random House is quoted as saying, "our feeling is that D.R.M. is not actually doing anything to prevent piracy" (Stone, 2008, para 16). This announcement is part of a larger set of failed schemes to stop file-sharing. Despite content owners' best efforts to thwart file-sharing, most reports show that file-sharing rates is either flat or still growing (Bangeman, 2007). Furthermore, estimates are that there are over 8.63 million people who user peer-to-peer (file sharing) services in the United Sates alone (Brafman & Beckstrom, 2006, p. 12). The key element of the many facets of the culture commons is that it enables commons-based circuits of cultural production, circulation, and reception – undermining the rent-seeking activities of large media content corporations.

Commons Revival: The Space

In addition to the physical wires and media content technologies, the space layer also contains an infrastructure that partially structures online

activities. When online spaces, services, and tools are under the control of commodity property regimes, there are serious limitations to the culture commons described above. For example, using Creative Commons licensing is impossible with Google-owned Youtube, as their terms of service stipulate that Youtube owns the rights to all content that flows through its website. Considering Youtube is the most popular video website on the Internet, and yet only one of the nodes owned by Google, this presents clear limitations to commons-based licensing systems. Seen another way, online commons regimes can provide an important buffer between the forces of enclosure and commons regimes on other layers. For example, after Napster and other peer-to-peer file sharing sites were charged with copyright infringement, an open source application called eMule filled the void. Since eMule has no owner or company behind it, and is built using open source software, it has so far escaped any legal ramifications — nobody even knows who started eMule (Brafman & Beckstrom, 2006). In other words, eMule (space commons regime) allows for a cultural commons practice (file sharing), to continue on the content layer.

Looking back to chapter 5, we can isolate one element that is constant between both harvesting participant commodities and maintaining synergistic membranes: control over the architecture of space, tools, or services. New media conglomerates cannot systematically corral web traffic or adequately monitor our online activities without some degree of control over this environment. For this reason non-profit open source software is critically important for maintaining, and expanding, the communication commons. As outlined below, open source

software, similar to that of Creative Commons licensing, creates commons-based spaces that directly challenge many of the control mechanisms utilized by media corporations.

Free software and open source software differ in significant ways, but for our purposes, we will use the term 'open source' to describe both together. Both free software and open source software mandate that users and developers distribute the source code (seen as a form of common property) along with the software and allow others to "modify the source as they desire" (Thomas, 2004, p.2). Open source software development often involves many contributors who are paid only in "prestige, satisfaction, and the uses to which they can put the improved software" (Murray, 2005, p. 35). The open-source ethic posits, "collectively – developed, non-commercial products as superior to proprietary, commercial ones, and decentralized, autonomous network and organization structures as superior to centralized ones" (Powell, 2007, p. 13). The peer production of open source software is a mode of interaction that is highly enabled by open network properties.

The custom of sharing computer source code precedes the introduction of the Internet. As far back as 1955, SHARE, a group of programmers, began sharing code in their efforts to upgrade their IBM systems (Ceruzzi, 2001, as cited in Milberry, 2008). The seeds of open source software and the online commons were planted when engineers began voluntarily submitting patches towards the development of the network precursory to the Internet. When the engineers did not get a response from the University of Illinois, where the project

was based, they decided to post upgrades themselves, by storing them on a computer that one of them had donated. (Brafman & Beckstrom, 2006). The web server software that came out of this open source project, "Apache", is now used around the world. A recent survey found that in the web server market, Apache had 58.86 percent of the market share, while Microsoft had only 31.13 percent (Wheeler, 2007, para 29).

The Internet started as a commons regime with the open source ethos outlined above, and in many ways a commons logic continues to govern the Internet. The core protocols and software, the content that was produced, and its overall structure were initially operated as a commons, due in part to the fact that the network as a whole was not controlled or owned, and access was open to anyone with the technical capabilities (Boyle, 2003; Levine, 2002). The early commons-based development of the Internet is important as it helped enable sharing and other non-proprietary activities that later became firmly entrenched online. The fact that the Internet is still quite open in terms of providing citizens with the ability to share information easily, can in part be contributed to its commons-based beginnings. While commercial interests have certainly enclosed much of the online commons, key tools, services and spaces are run as common regimes or at least promote a commons ethos (such as Firesox, Drupal, Linux, and Wikipedia).

The HTML protocol is a commons-based tool that was developed to facilitate the sharing of information among people. This very rudimentary protocol of online communication pushes a commons relation that makes it difficult for

commercial media to control online space. The fact that the early Internet was inscribed with software(html) that enables anyone with an Internet connection to post a link to anywhere else online, biases the Internet towards decentralization and interactivity. Although online corporate media companies are trying to enclose the Internet, they struggle to do so, in part because the hyper linked[17] nature of the web makes it relatively easy for citizens to find alternatives to commercial services.

Unlike commercial media corporations, which dominate traditional media, commons media, such as cooperatively-run radio stations and other non-profit non-commercial media, do not have a strong presence in traditional media. Therefore, it is even more significant that the online commons is a very considerable part of the online media milieu. As new-media political economist Yochai Benkler explains,

> The move to a communications environment built on cheap processors with high computation capabilities, interconnected in a pervasive network...allows for an increasing role for nonmarket production in the information and cultural production sector, organized in a radically more decentralized pattern than was true of this sector in the twentieth century. (Benkler, 2006 p. 3)

The diverse array of online commons regimes taking advantage of the Internet provides a matrix of experimentation with different forms of common-based subjectivities (Dyer-Witheford, 1999).

For evidence that the online commons is a major presence, we look to the Firefox browser, which, with a minuscule marketing budget, has grown to

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[17] Hyperlinks work based on "html" code, which is open source and commonly associated with the onset of the "web".

become Microsoft's number one competitor in this area – even surpassing the very savvy Apple corporation (Clickz.com, 2005). At the time of this writing, Firefox had been downloaded over 500 million times (Shankland, 2008, para 1). Another online commons project, the non-profit, open-source, citizen-produced Wikipedia.org, is touted as "one of the 15 most visited websites in the world" (Wikipedia, 2007, p. 1).[18] Furthermore, a survey made public in February 2004 found that at the time, 1.1 million developers in North America were working on open-source software projects (Wheeler, 2007, para 54).

Since the commons web is widely used, it can expand commons-based dispositions and organizational properties to other layers and constituencies, thereby weakening their autonomy, and possibly pushing back advances made by the forces of enclosure. As use of digital communications networks deepens (in terms of individual use), and widens (in terms of becoming more ubiquitous in society), the online commons instills wide sections of the public with commons dispositions. Indeed, because sharing is one of the core values of the commons, its logic can be viral and insidious: once it reaches a critical mass it can multiply almost indefinitely under the right conditions.

The widespread use of open-source software shapes not only the architecture of the web, but also the social dynamics distributed in the wider social totality. The online commons bleed values, discourse, and practices to the

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[18] Other popular open source projects include: the web's most popular server-side scripting language, PHP ; the most "popular Internet programming language, Perl; the program that routes more than 80 percent of all Internet email message worldwide, Sendmail; the program that is the basis for the domain name system, Bind; and the fasters growing operating system in the world Linux" (Wacha, 2003, as cited in Thomas, 2004, p. 4).

terrestrial world. A good example is a phenomenon known as "unconferences": a new form of radically democratic conferences inspired by open-source software development processes. Many conferences revolving around technology or media issues are now set up as unconferences, where participants direct the conference through a combination of online chat/wiki technologies and face-to-face interactions. For example, 'BarCamp' is a series of technology-focused unconferences formatted as an "ad-hoc gathering born from the desire for people to share and learn in an open environment" (Barcamp.org, 2007). These unconferences take an element of the online commons (direct, distributed decision making) and apply it to offline activities and relations. "We figured there was much more expertise in the audience than there possibly could be onstage," says BarCamp co-founder Ryan King (Craig, 2006). Unconferences demonstrate that participating in the online commons can bleed commons relations (self-governance, shared usage) to the wider social totality. As Kate Milberry notes, open source software development is

> prefigurative, providing a method for democratic and liberatory practice offline, in the 'real world'... if users actualize values of cooperation, collaboration, voluntarism, sharing and trust in their social interactions online, this surely has implications for social engagement offline. (Milberry, 2007)

Investing (time) in the online commons can lead to a moral, financial, social and cultural divestment in commodity property regimes and commercial activities. Moreover, as online commons tools and services become an important part of many users' subjectivity they can deepen and harden commons relations. This is furthered by the fact that online commons regimes are often more deeply

participatory than online property regimes – thus creating a tighter affinity amongst its members. If these cooperative networks of commons then interlink with terrestrial commons, we could see a dynamic, interdependent, symbiotic, commons force, and possibly, massive social shift towards the commons.

Solidifying and Networking the Commons

Commons-based protocols remain firmly entrenched in the architecture of the Internet, and thus provide a useful base for advancing the commons into new social spaces. The regimes described above create fertile soil for the commons to grow and become a substantial force in social, political and economic spheres. When we put the commons revival in the context of the enclosures ensuing on each level of Internet, it becomes clear that we need to solidify and expand this vital asset. One of most effective ways of doing so is to further embed commons relations into semi-autonomous and state-based regimes. Some efforts in this vein are already underway. The Canadian Association for Open Source works at the "federal, provincial and municipal levels to ensure that open source is understood as an effective use of public resources and a goal of public policy" (Canadian Association for Open Source, 2008).

Many state and semi-autonomous commons regimes already support the communication commons. NRK, the Norwegian public broadcaster, recently began distributing one of its TV shows free of digital rights management software, using "bittorrent" an open-source software application that enables peer to peer distribution of media. NRK is not alone in using bittorrent; BBC's iPlayer also employs the technology (Reardon, 2008). Since public broadcasters are

publicly-funded, and have a public interest mandate, there is a strong rationale

for their embracing the communication commons. To a certain extent public

broadcasters, with their public funding mechanisms and often non-commercial

operations, have always revealed and undermined the audience exploitation

required by commercial media by offering accessible public interest programming

with minimal collective investments (certainly less than required by commercial

media through our time and attention to ads).

In a more limited sense, state commons can undermine proprietary

software by using open-source software for programs and general operations.

For example, recently The Republic of Macedonia Ministry of Education and

Science announced that it will deploy more than 180,000 workstations running

Ubuntu, which is a Linux based system (Ubuntu, 2007). The savings for utilizing

Ubuntu are huge, the software is basically free for life. Gutstein notes the savings

for public institutions when,

> In1998 the Mexican government decided to install the Linux system in 140,000 elementary-and middle-school computer labs. Installing Windows 98, MS Office, and a server running Windows NT at school site would have cost the Mexican government about $124 Million (U.S.). The total cost for Linux for the entire system is fifty dollars. (Gutstein 1999)

One of the challenges of embedding commons relations into state institutions is

that overtly-politically-motivated decisions are often frowned upon, and capital

spending must be justified as "practical"(Phone Interview, February 25, 2008).

However, with the huge potential for savings and increasingly interoperable

systems, open source software is becoming a more practical option for state

regimes. Considering the rising practicality of open source software, state implementation of open source software looks to be an important opening for the communication commons. As one of our interview subjects put it: "when it's the practical choice, we use it" (Phone Interview, February 25, 2008).

While expanding institutional support for the communication commons remains important, networking existing commons projects, both between the layers of the Internet (physical, content, space), and between the terrestrial world and cyber world, is perhaps equally powerful. In addition to networking between layers, the commons could also deepen and widen by networking between domains (autonomous, semi-autonomous, and state). A multi-domain, multi-layered approach could vastly expand and congeal the commons.

Donald Gutstein (1999) proposes the formation of a coalition of "everyone who sees a public non-commercial role of the Internet." In a similar vein, Jeff Chester at the Center for Digital Democracy proclaims:

> What's needed is a national movement to weave together the various strands of new-media activism at the local level from community networks to public-access media centers to civic and cultural websites, and to build a broader coalition involving other parts of the nonprofit sector (including consumer advocates, civil rights groups, social service agencies, libraries, and cultural organizations) that have equally as much at stake in the broadband revolution. (Chester, 2006, p. 12)

There are coalitions along these lines in the U.S. media reform movement. In response to FCC media deregulation in 2002, a diverse mix of groups campaigned to role back the ruling. The coalition included Code Pink, the National Rifle Association, the National Organization for Women, the "Parents

Television Council (a conservative group focused on indecency in television), every major journalism association, labor groups like the Writers and Screen Actors Guilds, and a collection of liberal nonprofit organizations" (Beckerman, 2003, p. 2). Media reform coalitions have had some success; in additition to advances on net neutrality, in 2003 reformers were able to galvanize millions against a proposed media ownership liberalization in the U.S. (Hackett & Carroll, 2006, p. 13).

Media reformers seem to intrinsically understand the value of coalition building and networking. As one media reformer notes, "[working with different groups] improves our political education...they're some of my most valued partners" (Interview, November 3, 2007). Media reform organizations in the United States have personnel who work principally on "convening" meetings with different groups, and helping "people discover common policy interests" (Interview, November 4, 2007). However, the coalition approach does have certain limitations, considering the fact that these groups do not give much attention to issues related to open-source software and other adjacent issues. According to one media reform activist, "we haven't done a whole lot of linkage of open source issue with our own issue campaigns, apart from...our website" (Interview, November 3, 2007). Even those media reformers working to build bridges between other organizations have not considered open source software as an issue to engage with – when we asked one media reform worker if he had considered working to support open source software, he said, "nobody's ever said that before so that would be a long story to tell to people to get them

invested" (Interview, November 4, 2007). While some media reform groups work on copyright, it is also reportedly one of the "few things that nobody came to an agreement on" (Ibid). It appears that collaborations in coalitions are useful, but they can be somewhat limited in scope.

While coalition building is often constructive, efforts to *network the commons* could also prove fruitful in some circumstances. A less binding network formation leaves room for the inclusion of groups with competing orientations, as well as those of the state and semi-autonomous commons. A public university or city branch might be more inclined to support a network of organizations working towards bridging the digital divide than to join a specific coalition. With different constituencies connecting as interrelated nodes rather than being shaped by a directed force, these spaces become more flexible and adaptive compared to focused coalitions (Castells, 2000). The previously mentioned "unconferences" are a good example of a networked process. Unconferences are inclusive and focus on solving techno-social problems rather than focusing on a particular goal or set of objectives. Networking the commons gels especially well with the open software community in its explicit drive to make collaborative work easier. As an open source software developer said, our "goal is to build a network of everyone…to create a network that scales…a fluid network where it's easy to collaborate with different organizations" (Phone Interview, February 26, 2008).

There are groups already working to network the commons, such as "iCommons": an organization with a broad vision to develop a united global commons front by collaborating with open education, access to knowledge, free

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software, open access publishing, and free culture communities around the world. At the annual iCommons Summit, commoners join together to "discuss strategies for continuing the positive impact that 'sharing' practices are having on participation in the cultural and knowledge domains" (iCommons, 2008).

A more concrete example of networked commons came about in December 2007, when Wikipedia and Free Software Foundation agreed to make use of Creative Commons license rather than the less recognized (more software focused) General Public License. Having a united licensing system through online commons regimes, such as Creative Commons and Wikipedia, creates a mutually reinforcing force between the two projects. Wikipedia will now have access to an easy to use copyright license system that will make its community more flexible. Creative Commons will gain consistent publicity as its badges appear on one the most popular website on the planet. The Free Software Foundation can focus more specifically on licensing and other activities concerning open-source free software.

Community wireless network (CWN) regimes are well positioned to connect with those working toward expanding the terrestrial commons. For example, CWN projects often offer free WiFi in public spaces and "can revitalize and re-populate parks, pedestrian walkways, outdoor cafes, and civic squares by attracting citizens, tourists and mobile workers equipped with wireless devices" (Middleton et al., 2006, p.13). Since CWN projects often function to promote public and/or shared space, these projects often overlap with the work of public space advocates. In fact, public space advocates are in a strong position to make

connections between commons regimes on all three layers and those working to save the terrestrial commons. While the public space advocates interviewed did not engage with communications issues or causes, they did view communications infrastructure as a public resource in need of defense. A combined campaign between public space advocates and community wireless activists could be desirable for both groups.

Community Internet projects are in a good position to become a nexus for the communication commons. In many ways, community-based wireless projects are able to survive through their connection to the local community and related commons regimes. For example, the only public funding Montreal wireless project Île Sans Fil (ISF) has generated, came from a partnership with the Mobile Digital Commons Network, which mandated the development of software displaying local media and art (Powell & Shade, 2008). ISF developed software that gives each wireless access area "a unique opening page with places for locally produced art work, community content, and profiles for users logged on in any location" (Powell, 2007, p. 16) The most obvious opportunity for CWNs, is in developing arrangements with local municipalities for access to their fiber network. Others candidates include independent media, artists, libraries/librarians, educational institutions, unions, foundations, churches, media reform organizations, credit unions, co-ops, and other social movement organizations. These linkages seem to come about naturally due to a common underlying logic between all these regimes. For example, one community Internet activist cited his main goals as "unwiring housing cooperatives" (Phone Interview,

February 24, 2008). There is a logical connection between providing a shared Internet connection and a social environment defined by shared usage.

Another networked commons project worth taking note of is K-Net: "a combined satellite-Terrestrial digital network that serves over 100 First Nations communities in Canada" (Fiser & Clement, 2007, p. 6). Operated by a non-profit cooperative that works in conjunction with local community networks and government agencies, K-Net was created out of a community radio network that "propagated a community–based model of local ownership, local production, and local control of broadcast media" (Fiser & Clement, 2007, p. 23). K-Net utilized a legacy of social, cultural and physical commons infrastructure to plant a new communication commons regime.

The initial thrust and continued successful operation of K-Net rests in its dynamic structure, including a community-based cooperative enterprise (K-Net), a network of community groups that connect to K-Net, and public sector investors. Adam Fiser and Andrew Clement[19] note that this model requires a "community champion"(K-Net) to carry out service, and a "public sector champion" (Industry Canada and FedNor) to help smooth communications between the not-for-profit and necessary partner sectors (Fiser & Clement, 2007, p. 10). As Fiser & Clement (2007) explain, Fednor (public sector champion) was "instrumental in attracting other public sector partners" (p. 50). The research in this study suggests that community commons regimes are capable of carrying

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[19] Adam Fiser and Andrew Clement published a compressive research report on K-Net for the Ontario Ministry of Government Services called "The K-Net broadband deployment model" (2007)

out communication services if supported by public investors, as K-Net is. The key

challenge for producing more structures similar to K-Net, is embedding commons

relations in government development agencies so that they embrace public-

community partnerships. What is unique about K-Net is that they were able to

find and connect with sympathetic agents within public development agencies.

Most essential to a viable networked commons is a movement to expand

the commons on every level spatially (locally, regionally, nationally, globally),

culturally (practices, rituals, narratives, cultural production), technologically

(open-source, online commons), and structurally (co-operatives, collectives, non-

profit institutions, state policy/government reform) -- mutually reinforcing one

another, circulating, deepening and widening the field of commons relations.

Expanding the commons on all fronts would enable civil society to capture more

municipal and state resources. Richard Day's conception of the 'invisible city' is

a useful approach to embedding the commons in the structures and practices of

everyday life. Day asserts that we should:

> ...build institutions of mutual aid that make creative and careful use
> of existing forms such as co-operatives, credit unions, and even
> perhaps municipalities, city wards, and the various spaces
> occupied by indigenous peoples, draining energy from the
> dominant , marginalizing it, duplicating those of its 'functions' that
> are desirable. (Day, 2007, p. 87)

Forging reinforced linkages between all forms of the commons, including those

directed at (or involving) the state, is an appropriate step to expanding the logic

of the commons to other social spaces. By networking the commons we can

realize "the possibility of living differently, that creates the kind of culture that can

sustain" a social, political, economic, and communication commons (Day, 2007,

p. 86).

CHAPTER 7: CONCLUSION

The Internet, perhaps more than most other social phenomena, is constantly evolving. While there is a degree of continuity to the relations of force shaping the Internet, this study should be viewed as a snapshot of the social dynamics that will inevitably change over time. As the architecture of the Internet continues to unfold, we hope that this text provides a construct for future research. Our rather broad analysis of the Internet's social constitution leaves much unexplored. In particular, the potential for networked commons merits close analysis. Do certain partnership arrangements work better than others? Are linkages growing in depth and breadth over time?

The above exploration reveals that commodity property relations of force driving enclosure on each layer of the Internet (physical, content, space). The physical Internet has moved from a network largely governed by volunteers, government agencies and public institutions, to a network, owned and controlled largely by telecommunication corporations. These same corporations now lobby governments to relax common carrier (net neutrality) rules, and further commodify the physical Internet. On the content layer of the Internet, punitive copyright legislation, technological restrictions, and media concentration together enable media corporations to limit the flow of culture. On the space layer, producing and selling online participant labour now shapes the architecture of many widely used online spaces, tools and services. While the initial social

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relations of the Internet revolved around sharing and reciprocity, we are moving towards relations based on commercial exploitation. Exploitation requires control, and one mechanism of control employed by media corporations is creating 'synergistic membranes'. As discussed in chapter 5, the control of dominant web spaces, tools and services is held by a small number of powerful media companies who network their online spaces and tools into semi-permeable membranes that restrict online navigation. The dominant powers on each layer of the Internet push for control and exclusion as a means to exploit and reorient online commoners, as consumers.

We found that there is a very strong interdependency between the forces of enclosure on each layer of the Internet (physical, content, space). There are clear signs that if enclosure deepens enough on one layer, the others follow shortly after. The clearest example of this enclosure spillover, or cascading effect, can be found on the content layer, where media corporations are lobbying to enable ISPs to filter the Internet for copyright violations. If successful, this will provide justification for ISPs to discriminate against the online traffic based on its source, and therefore nullify net neutrality. As forces of enclosure between the layers of the Internet deepen, widen, and interlink, we risk unleashing a confluence of force, and with it, a multi-layered enclosure of the Internet.

Our examination also revealed that commodity property regimes rely on the cycle of enclosure to extract excessive profits from monopolistic markets, and use this capital to lobby governments and/or buy up competitors. We also found that commons regimes can create a break in the cycle of enclosure by thwarting

corporate lobbying efforts. Developing communication commons regimes such as Creative Commons and open source software also limit the cycle of enclosure by offering a viable alternative to commercially-developed culture and online space.

Enclosure is not the only social process shaping digital communications; there is also a simultaneous commonization unfolding. While the overall trajectory of Internet governance points to a continued deepening and widening of enclosure, a countervailing commons force persists. The examples, as cited in chapter 6 point to a communication commons revival that could potentially rebuff communication enclosures and solidify into a vibrant communication commons. Palpable examples include the continued use of peer-to-peer applications to share culture, open source software, community/municipal Internet, and Creative Commons licensing. As discussed in chapter 6 (unconferences) communication commons regimes are important not only because they shape our communications system, but also because they bleed commons relations into the terrestrial world. These regimes represent not only a space of resistance to enclosure, but also more importantly, spaces to imagine, and live out alternatives to a society dominated by commercial interests.

Prospects for the communication commons are particularly strong if regimes interconnect with one another, and establish links to sympathetic government agencies. Much the same as enclosure, the commons regimes on one layer greatly aid those on another. Commons regimes in different socio-

spatial domains can interlock, creating a circulation of shared usage, mutual aid and cooperative management.

Networking the communication commons remains an important endeavor, especially if built into a confederated commons made up of multiple domains (terrestrial and cyber), and multiple institutional forms (autonomous, semi-autonomous, state-based). A key lynchpin in building such networks, and breaking down the forces of enclosure, is rallying support for the commons from municipal and state sources.

In opening this text we cited hip hop artist and poet Saul Williams' romantic notion that "the ways of middlemen proves to be just a passing trend" (Williams, 2008, para 1). While there are many openings for new and innovative uses of the Internet, including new ways to share cultural works, the trajectory of the Internet is still undetermined. As this thesis demonstrates, while the ends are unclear, the future of the Internet will be negotiated by a wide spectrum of social forces and actors. The middlemen to which Williams refers, are trying to enclose each layer of Internet. If we feel strongly about the democratic potential of the Internet and the openings provided for artists like Williams, we will need to find a way to advance the communication commons. There is a communication commons revival underway, but it is one upon which we must continually build.

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over, platforms that commodify our online social interactions. Commodification is

a process whereby a thing is objectified and given a value that is accrued by the

market, the triumph of exchange values over use-value (Mosco, 1996).

Commodifying our personal communication is about more than bits and bytes; it

is about commodifing our social dialogue, identity formation, social bonds and

relationships. Companies that control cyber spaces and tools are essentially

charging online participants rents similar to the way the landlords charged rents

of tenants during the enclosure movement. The online media corporations do not

demand direct financial payment; they take economic coercion to a more abstract

level. This is what Dallas Smythe called the 'audience commodity.'[10] According to

Smythe, "the work which audience members perform for the advertiser to whom

they have been sold is learning to buy goods and to spend their income

accordingly" (Smythe, 1981, p. 243). Furthermore, the corporate media

company's primary role is to produce audience commodities for advertisers, the

production of media content can be seen as an ingredient in that mode of

production. Extending from this, the media company that most efficiently

produces the most valuable audience commodity (affluent, large numbers,

conspicuous consumers etc.) earns the most surplus value and thus

accumulates the most capital that can be reinvested in the mechanisms of

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[10] The "audience commodity" is a concept Dallas Smythe first introduced in the *Canadian Journal of Political and Social Theory* (1977), in a journal article titled "Communications: Blindspot of Western Marxism". This article set off an exchange with several communication academics, including Bill Livant and Graham Murdock. Smythe later developed the "audience commodity" concept further in his book *Dependency Road* (1981). The basic concept asserts that audiences are produced by media corporations, that audiences do work for media, and that audience do work for advertisers - "audience power". The latter, is of most importance: "audience power" includes the work it takes to learn about a product, as well as to make a purchase.

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