Intellectual Property From Outside the Box: The Curious Case of Internet From Space

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INTRODUCTION

A new form of the Internet-Connected Network (the Internet) is here, and the law needs to take heed. This rival functions by way of beaming free wi-fi to and from space. It aims to reach every person and location on earth. One of the first contenders in this field is the Outernet system. A fully operational Outernet will require the launch of hundreds of satellites into low Earth orbit. Each satellite, which receives data from a network of ground stations, will broadcast the Internet to phones and computers, giving billions of people across the globe free online access. Using something known as datacasting technology, the Outernet (and other systems like it) promises to broadcast the Internet around the world.

This paper looks at this exciting new medium through the intellectual property looking glass. It highlights the many benefits and the challenges that the Outernet will pose to intellectual property.

The paper is comprised of three chapters. The first chapter discusses the Outernet type of technology and its benefits to intellectual property. The second chapter looks at the challenges, both immediate and future, and possible threats to IP-protected content. The third and last chapter examines regulative tools that could be employed in order to deal with these challenges without detracting from the benefits that need to be preserved in order to expand internet communication.

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Chapter One

The Makings of the Outernet and its Benefits

A new rival to the Internet is at our doorstep—or rather, over our roof tops—and the law needs to take heed. This rival is comprised of a network of miniature satellites that are launched into low Earth orbit and effectively facilitate internet access around the globe. One of these initiatives is referred to as the "Outernet." There are other systems being developed as well.[1] This research focuses on the Outernet as a case study, but its findings are applicable to similar models as well.

The Outernet is operated by Media Development Investment Fund (MDIF), a private corporation. MDIF now beams free wi-fi to and from space. It aims to reach every person and location on earth. In order to achieve this ambitious goal, MDIF plans to further launch hundreds of CubeSats (miniature satellites) into low earth orbit. For this purpose, the Outernet has already been cooperating with the UK Space Agency and Clyde Space (a Scottish satellite equipment manufacturer) on a cost-sharing endeavor for manufacturing and launching CubeSats into space. NASA may be getting involved soon.[2] Each CubeSate satellite, which receives data from a network of ground stations, will broadcast the Internet-based information to phones and computers, giving billions of people across the globe free online access. With this satellite-based communication, using something known as datacasting technology—which involves sending data over wide radio waves—the New York-based company that is developing the Outernet says they'll be able to broadcast the Internet around the world.

From the outset, I should like to point out that the dramatic impact that I see (as many others do) for the Outernet is not shared by all. In fact, there are harsh skeptics of the Outernet and systems like it. These skeptics challenge the viability and vitality of the technological foundations of the project and the social benefits that are anticipated. According to one commentary, "much like the solar roadway, this is yet another pie in the sky fundraising effort that will yield zero useful results."[3] The reason for this

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1. These companies include: Facebook-backed Internet.org initiative; Google's balloon-based (Project Loon); and satellite internet companies such as OneWeb and O3b as well as SpaceX.

2. Jonathan Shiever, *Outernet Joins the Space Race for Internet Accessibility*, Techcrunch (Mar. 13, 2015), http://techcrunch.com/2015/03/13/outernet-joins-the-space-race-for-internet-accessibility.

3. *See* KeriLynn Engel, *How the Outernet Will Free the Internet*, Who Is Hosting This?, http://www.whoishostingthis.com/blog/2014/08/26/outernet (last visited Sept. 26, 2016); Cryptovariable, https://www.reddit.com/r/Futurology/comments/2a8jzn/how_the_outernet_will _free_the_internet_from. The skepticism also relates to the life span and vitality of CubeSats in that their decay rate is high and that they might last only 3-4 year from orbit deployment. This

harsh criticism is based primarily on technical issues—namely, that this is basically a satellite-based one-way data transmission and not the Internet (in the classic sense of the word). There is also doubt as to the viability of two-way communications with satellites in low earth orbit.[4] Furthermore, the skeptics point to another very serious problem, contending that it would be virtually impossible to tune into satellites that are overhead for two- to six-minute segments, and that it is much easier to jam the frequency of said satellites than regular short-wave land-based antennas.[5]

But while these questions (an ensuing skepticism) might be relevant on the technical level, and while they might carry some merit, the issue is well beyond the scope of this research. Indeed, although the Outernet, as any innovation that preceded it, is set to encounter some challenges, the skepticism which basically leads to undermining the merits of the Outernet is not justified. I should like to mention three reasons for this:

First, the Outernet (and other systems like it) is now a fact. It is operational, though still on a relatively "primitive" and limited level.[6]

Second, the benefits of the Outernet cannot be overlooked and as such one should not dismiss them based only on technical reasons of functionality and cost. That is because, all innovations, even the internet itself, began with primitive "baby steps." Indeed, if one were quick to judge (and condemn) them at their inception, there would not have been any Internet, cellular phone, or even personal computers.

Third, other large companies are looking into methods in which to expand internet connectivity to the public. Suffice it to mention here Facebook's plans to launch multiple solar powered drones, and Google's concept of creating a network of helium balloons for broadcasting the internet. In short, the fact that such pioneering companies are involved in the race to expand intent reception provides sufficient evidence of the merit and possibly even the viability of the Outernet.[7]

Our collective human experience shows that technology grows and expands exponentially. It has a tendency to improve in rapid steps and to develop; its developers also learn from mistakes. As such I predict that a satellite based feed of intern-computer communication is here to stay.

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mean a need for hundreds of CubeSats and a stock-pile of (spares) at least two fold of replacement, and the additional problem of "meshing" of the CubeSats.

    4. *See supra* note 3.

    5. *Id.*

    6. Outernet (@outernetforall), FACEBOOK (Aug. 3, 2015), https://www.facebook.com/OuternetForAll/posts/383980288465952 ("Meet Lighthouse, our first receiver. We installed one in a school in Uganda on a remote island in Lake Victoria.").

    7. ABC RN, *Outernet: Free Data Forever?*, YOUTUBE (Nov. 20, 2014), https://www.youtube.com/watch?v=BHjmLbk00sI (discussing Outernet and its global access to the best, free content).

Granted, the systems to-date are not yet of a caliber so as to become the main stream for Internet traffic, but the existing system have crossed the thresh-hold and are likely to develop much more in the intermediate (and possibly in the immediate) future. In this regard, the Outernet bears the hallmarks of a transformative Internet. It is basically a massive decentralized system that is not contingent on a classic network structure, an Internet Service Provider ISP, and a search engine. Outernet is based on a single broadcaster that broadcasts content to an unlimited and undefined group of receivers. Clearly, as far as dissemination of information goes, the Outenrnet seems to be a game-changer. And hence the law needs to take heed. In order to show the dramatic impact that the Outernet will have on Internet usage and society at large, I should like to shed light on three issues:

1.   Censorship and the Ability to Exercise Freedom of Expression

Just as police (and customs) around the world control crossing points and man checkpoints and just as armies patrol and protect borders, so too the internet is a rather convenient tool for censoring content. In this context, censorship is the privilege to determine that certain content should not be seen by the public and the ability (both legally and technically) to prevent the public from seeing it. So censorship is both the determination and the act of preventing coupled into one. In this regard, Mathiesen defines censorship as "restricting or limiting access to an expression, portion of an expression, or category of expression, which has been made public by its author, based on the belief that it will be a bad thing if people access the content of that expression."[8]

Consider the empowerment of users in countries that are presently censoring internet content (e.g., China and North Korea). The Outernet looks to be poised to provide access to free and unrestricted cyberspace. What does this mean for free speech? And for protected (copyrighted) content? In this part, I will shed light on the very real problem of internet content based censorship and explain how the Outernet can function in a manner that curbs excessive use of said mechanism.

When we think censorship, we are inclined to associate it with non-democratic and more so totalitarian states and with countries with a very centralized form of government—North Korea being a prime example. But even in more open countries, such as China, internet censorship seems to be

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8. Kay Mathiesen, *Censorship and Access to Information* (Sept. 6, 2008), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1264451.

widespread.[9] But in fact, this tool of censorship is not limited to this group of countries and has become much more prevalent around the world. Indeed, the ability to police internet traffic is technologically available by way of Deep Packet Inspection (DPI). DIP now allows internet service providers to "monitor the content of data packets in real-time and make decisions about how to handle them."[10] As such, "censorship" is not a word that is limited to a specific type of country. Rather, it applies to all countries. In fact, even countries that pride themselves on being full democracies have witnessed laws to this effect. Over the past decade, Australia has decided to implement some degree of Internet censorship using technological means. As such, it has become the "first Western democracy to mandate filtering legislatively, and to retrofit it to decentralized network architecture."[11] But while Australia seems to be "open about its filtering goals, the government's transparency about what content is to be blocked is poor."[12] And therein lays the problem at the heart of censorship. It is not the idea of censorship that is problematic; rather, it is more to do with the lack of clarity regarding the content that could be blocked through censorship. In this regard, Bambauer has stated that "Australia represents a shift by Western democracies towards legitimating Internet filtering and away from robust consideration of the alternatives available to combat undesirable information."[13] But, for the sake of fairness, Australia is not the only democratic country struggling with this issue. Consider, for example, the situation in South Korea, a democracy that is prepared to "tolerate significant censorship of online political speech."[14] Fish predicts that South Korea's internet censorship regime "may not be effective or sustainable into the future."[15] Edwards

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9. Even as early as 2002, the Chinese government appears to have been heavily engaged in censorship of the internet for its domestic users. *See* Jonathan Zittrain & Benjanin G. Edelman, *Internet Filtering in China* IEEE Internet Computing (March/April 2003), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=399920. According to Zittrain and Edelman, tracked over 19 thousand blocked sites in china covering a host of issue including news, politics, health, commerce, and entertainment.

10. Ralf Bendrath and Milton Mueller, *The End of the Net as We Know it? Deep Packet Inspection and Internet Governance* (Aug. 4, 2010), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1653259.

11. Derek Bambauer, *Filtering in Oz: Australia's Foray into Internet Censorship*, Brooklyn Law School, Legal Studies Paper No. 125 (Dec. 22, 2008), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1319466.

12. *Id*.

13. *Id*.

14. Eric S. Fish, *Is Internet Censorship Compatible with Democracy?: Legal Restrictions of Online Speech in South Korea* (Oct. 15, 2009), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1489621. Fish demonstrates how a decades-long policy of free speech in South Korea has left the Internet "particularly vulnerable."

15. *Id*.

detects a "dangerous international trend towards non transparent and non-accountable censorship online, not only in non-democratic countries like China but increasingly in Europe and elsewhere."[16] She calls for the creation of a "speech impact assessment process [before] new systems of top-down state-endorsed Internet filtering are implemented."[17]

But, while all of these issues are usually engaging the system from within and its approach to the internet, the Outernet introduces a solution from without. That is to say, the Outnernet changes the paradigm, thus instead of relying on states to formulate policies that are more conducive to free speech (and free communication); the Outernet places the power in the hands of the masses.

It is said, that in democracies there resides a fourth authority (in addition to the executive branch, legislator and the judicial system); it is the "media." The "media" has allowed for bringing more information before the public, thus creating more robust checks and balances between the three above mentioned authorities and also empowering the public to be more informed. In this regard, Riley observes, "Today, Internet governance is a complex system of checks and balances among users, businesses, and governments."[18] That is exactly what Outernet-type systems can ensure in an age where the virtual world of communication and information has become the primary battleground of real life. In fact, as Fish points out the question of internet censorship "takes on particular importance as the Internet is becoming the dominant model of mass communication in many democracies, and as television and print journalism increasingly fuse with the Internet and lose their independent identities."[19]

Hence the crucial importance of the Outernet model in that it secures methods of communication that are not contingent on the whims or determinations of government, and which allow people to exercise what I would refer to as true internet without borders. This is achieved by way of getting their opinions out there. Granted, this "fenceless" system poses some downsides and dangers. I will discuss these in the next chapter. But with that being said, the truth remains, that where power is exercised without restraint (and full transparency), there is a potential for abuse. Collective wisdom needs to be kept part of the equation in order to act as the "fifth authority" in the virtual world. As Balkin observes, "The most

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16. Lilian Edwards, *Pornography, Censorship and the Internet* (July 16, 2009), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1435093.

17. *Id*.

18. M. Christopher Riley, *Anarchy, State, or Utopia? Checks and Balances of Power in Internet Governance* (Mar. 2, 2013), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2262055.

19. Fish, *supra* note 14, at 46.

important decisions affecting the future of freedom of speech will not occur in constitutional law; they will be decisions about technological design, legislative and administrative regulations, the formation of new business models, and the collective activities of end-users."[20]   And so without opening up the debate over the extent to which information needs to be ingested and digested, the basic premise needs to be that information needs to flow freely and seamlessly, this is basically the life blood of a truly free society.   Indeed, if to continue with the metaphor, blood sometime carries a virus, or disease, yet to deprive a patient of his blood just because a virus could spreads through his body, is medically unsound to say the least.   And so it is in the case of channels of information.   Clearly, then, this imperative freedom of expression is part of a larger debate which Balkin aptly refers to as "knowledge and information policy."[21]   But without derogating from the above, it remains true that censorship or rather the abstention from said censorship is only one component which can ensure free speech.   Balikn, talks about the need for "an infrastructure of free expression."[22] I believe that this view regarding the dual conditions for free speech is accentuated in the context of internet based communication.   It sits very well with what the Outernet can ensure, and that is to pass information outside the realm of governmental censorship.   That infrastructure of free expression, if "properly designed" (as Balkin puts it), should—according to Balkin—give people "opportunities to create and build technologies and institutions that other people can use for communication and association."[23]   In this regard, the Outernet can function around the globe as a very useful facilitator of the core value of free speech.

Balkin alerts to the great shifting landscape of free speech. Thus, while in the twentieth century there has been a rise in the protection of the "formal freedom to speak"[24] while mass broadcast technologies have reserved practical freedom to a relative few, in the twenty-first century, new technologies offer ordinary citizens a vast range of new opportunities to speak while said speech is being turned into a "commodity."[25]   In some cases, information is collected by their parties for commercial or security reasons.[26]   Thus, technologies that create new possibilities for democratic

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20.   Kack M. Balkin, *The Future of Free Expression in a Digital Age*, 36 PEPP. L. R. 427, 427 (2009).

21.   *Id*. at 102.

22.   *Id*. at 106.

23.   *Id*.

24.   *Id*. at 114-15.

25.   *Id*. at 115.

26.   According to Balkin, technologies that create new possibilities for democratic cultural participation often threaten business models that seek to commodify knowledge and control its access and distribution.   *Id*.   Intellectual property and telecommunications law may be the terrain

cultural participation often threaten business models that seek to commodify knowledge and control its access and distribution. Intellectual property and telecommunications law may be the terrain on which this struggle occurs, but what is at stake is the practical structure of freedom of speech in the new century.

It is also important to note that not exercising censorship may, after all, be a good thing for countries and communities. That is because the ability to vent anger via the social networks may in fact create a lesser tendency for violence on the streets. Casilli and Tubaro show this with respect to some events of social and public unrest in the initial periods of the Arab spring and in the British riots that took place in 2011.[27] They have argued that the decision to "regulate" or restrict social media in situations of civil unrest results in higher levels of violence. In their view, "a complete absence of censorship, not only corresponds to lower levels of violence over time, but allows for significant periods of social peace after each outburst."[28]

In order to drive the censorship point home in the context of intellectual property, one should bear in mind that IP is not only the right to say something, or the right to protect that creativity or expression; it is also the right to share that content with the world. This is so inherent to the IP system that we tend to take it for granted and to treat it as a given. Indeed, the bundle of rights that is vested, by the law, in the hands of the copyright owner allows the owner the right of performance, as well as the right to make available the expression in a digital medium. That is to say, just as copyrights are infringed if a non-owner of the content places it online, so too when the content and the ideas therein are excluded from public discourse, the copyright in that content has not been exercised by the right holder and as such has been de-facto infringed. Thus, the Outernet by its very structure is capable of traversing the closed gates and thus can allow the owners of copyrighted content to bring that content (and the ideas therein) to a public that otherwise would not have had access to them.

2. Proliferation of Access to the Internet

The number of worldwide internet users has risen drastically over the past ten years, when in 2005 the number was just over one billion worldwide. The number has risen to a staggering level: just about 3.2

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on which this struggle occurs, but what is at stake is the practical structure of freedom of speech in the new century.

27. Antonio A. Casilli & Paola Tubaro, *Why Net Censorship in Times of Political Unrest Results in More Violent Uprisings: A Social Simulation Experiment on the UK Riots* (Aug. 14, 2011), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1909467.

28. *Id.*

million in 2005.[29] However, there is a drastic difference in the proliferation of the internet amongst continents. Indeed, while is June 2015 the North American continent and Europe boasted 87.9% and 73.5% internet penetration amongst the general population, that ration for the same point in time was only 27% in Africa and a little over at 38.8% in Asia.[30] Granted, the growth rate of internet penetration in Africa has been rising drastically between 2000 and 2015 at over 6389%. Africa's share—as well as the share of other continents such as Asia as well as the Middle East and Latin America—remains noticeably lower than that of North America and Europe. Furthermore, it is important to bear in mind that in a large continent such as Asia, there is also the great difference amongst countries. Consider inter penetration in North Korea as compared with its southern neighbor (South Korea) or Japan. Thus, the impressive rise in internet usage for Asia and Africa over the past fifteen years still does not insure continent wide internet access, but is more likely reflective of internet penetration in countries that already have internet use.[31] Indeed, According to the World Bank, while in South Korea over 84% of the population has internet access, in Afghanistan (also in Asia) only 6.4% have internet connection.[32] This drastic fluctuation amongst countries of the same continent is prevalent around the world.[33] Hence, the access issue for land-based internet will continue to be for the mostly rich or middle class. In that sense, remote places in all continents rich or poor will still be much less likely to receive internet connection in the conventional internet infrastructure.

Thus, as things stand, it is estimated that only 40% of the world's population currently has access to the internet. Thus, they are prevented from accessing the wealth of knowledge that the internet provides. Thus, nearly 5 billion people today lack basic internet access. Most of these reside in remote or rural areas.

But where the internet has failed, the Outernet hopes to succeed. The Outernet is set to circumvent the infrastructure problems and thus to allow internet access to all. It easy to see how the Outernet constitutes a new internet revolution; namely Internet for all wherever they may be. Thus, it is not surprising that the Outernet refers to itself as

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29. *See Number of Internet Users Worldwide from 2005 to 2016 (in millions)*, STATISTA, http://www.statista.com/statistics/273018/number-of-internet-users-worldwide (last visited Sept. 26, 2016).

30. *Internet Users in the World by Regions*, INTERNET WORLD STATS, http://www.internetworldstats.com/stats.htm (last visited Sept. 26, 2016).

31. *For a comprehensive survey of Internet access per country, see* id.

32. *Internet Users (Per 100 People)*, WORLD BANK, http://data.worldbank.org/indicator/IT.NET.USER.P2 (last visited Sept. 26, 2016).

33. *Id.*

humanity's public Library. The Lighthouse device by Outernet stores the information it receives from Outernet on its internal drive. Teachers and students can connect to the Lighthouse Wi-Fi signal to browse the content or connect Lighthouse to an existing LAN network.

3.   Information Sharing

The Outernet is based on the technique known as User Datagram Protocol (UDP) multitasking. The UDP is based on the sharing of data between users. In essence UDP is a revamping of P2P methods. Users will be able to flick through certain sites much like flicking through television channels. Outernet will essentially broadcast the Internet, and in many respects will preserve the "End-to-End" design that is internet to the internet's success. Lamely and Lessing have cautioned against any change in the architectural design of the internet, especially in with the onset of high-speed cable modem service with ISP service by some cable companies.[34]   The Outernet constitutes a preservation of the internet's design as an end-to-end system. In fact, it is less subject to censorship, more accessible to user around the world and more vibrant in allowing for unimpeded content sharing. At this point, I need to emphasize the reality that as things stand, the Outernet currently is only a broadcast-receiver system; that is to say its users are not able to put their own content to others, nor are the able to join social networks or even surf the internet for that matter. At this point, the Outernet by its own admission is aiming to become "humanity's public library." But even that is a giant leap forward. Imagine if you will a village in a remote region of a poor country. Imagine if someone wanted to erect a library with a bunch of books and encyclopedias. It would be cynical to claim that by doing so the pole in the village will now become part of the world—yet with that being said, all would agree that by allowing people access to information in those books, they are effectively much more involved, and in fact are parents in the information that is out there that would have stayed beyond their reach had it not been for that library. And so it is with the Outernet. Consider if you will the words of articles 7 of TRIPS, wherein it is stated that:

The protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and

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34. Mark A. Lemley & Lawrence Lessig, *The End of End-to-End: Preserving the Architecture of the Internet in the Broadband Era*, 48 UCLA L Rev. 925 (2001) (discussing the multiple dangers of changing the architectural design of the Internet, including losing ISP competition, risking that monopolies will negatively affect the net's architecture to protect their territories, threatening innovative technology, and affecting the internet's entire architecture).

users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations.[35]

Consider how the Outernet model embodies these ideas in the context of empowerment. In this the power is not their communication, but rather their ability to share the information with all peoples. That in itself is the first step towards full empowerment of peoples in developing countries or remote areas.

Interestingly, copyright law in the same manner does not extend protection to facts and scientific information and mathematical equations. These rightfully seem as public domain information. The regulators (both on the international and national level) are keenly aware of the ramification of blocking such knowledge by war of creating ownership over this type of content. In this regard as well the Outernet finds itself in agreement with these principles that underlie copyright protection.

CHAPTER TWO

The Challenges that the Outernet Poses to Intellectual Property Protection

While all of the benefits of the Outernet are notable, the Outernet will not come without a cost. Indeed, the entire idea of policing the internet is not only about the excessive control of states agencies, it is also about safety and law and order. As such, it is not easy to strike a balance between the openness and complete (oversight) censorship. In many respects, this struggle over control is to be blamed on the masses (or at least in a notable segment of the population) in that their conduct over the internet has necessitated and thus justified censorship and regulative control. Riley portrays the shift from the utopian internet which over time has become a fertile breeding ground for selfish, immoral and illegal behavior:

> In the beginning, the Internet was managed primarily through a social contract. Good behavior from all parties involved produced a ripe environment for invention and innovation and generated tremendous benefits for the entire world. But over time, the influx of money and power began to reward selfish behavior more and more, breaking open the Internet's utopia and leading to crime, censorship, and fights over control. As a result, many are questioning whether national or international governmental bodies should play a more active role in Internet governance. As it is frequently framed, this question of "more or less government" on the Internet is overly simplistic. Today, Internet governance is a complex system of checks and balances among users,

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35. Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), 1869 U.N.T.S. 299, art. 7.

businesses, and governments – and too great a disparity of power, for any of these parties, could create imbalance and undermine some policy goals in favor of others, to the detriment of the Internet as a whole.[36]

Most notably, the primary challenge of the Outernet (in the context of intellectual property) will be about the protection of content, and sensitive information as well as and privacy. In this chapter I shall look at all of these social costs which Outernet type system might exasperate.

Indeed, in order to better the grasp the magnitude of these challenges, suffice it to consider the following questions: What happens when the internet becomes a free for all, with no ability to trace, or to track? What would be of applying legal protections when a potential infringer is much less visible or identifiable; by way of the lack of and Internet Protocol (IP) number)? How would a Digital Rights Management (DRM) system adapt to this new method of connecting between various computer users? How can the law provide protections to copyrightable content in such an environment? What might be the response of international institutions such as WIPO and WTO to these types of systems ponce they become widespread? What would be the effectiveness of existing treaties and laws in view of such a change (consider here WCT, WPPT and well national laws such as the US Digital Millennium Copyright Act (DMCA)? How should the legal system gear up in order to deal with this new technology?

These questions go to show the wide scope of the battle lines so to speak between the conventional regulative system and challenges that the new system will most likely bring about? The go to show the potential deep impact that that Outernet type systems could have on the internet and on intellectual property rights therein.

To date the two primary treaties dealing with content on the Internet are the WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty (WIPO Internet Treaties). Okediji explains that these agreements which have been established just over fifteen years ago are "increasingly less relevant in addressing the challenges of creativity in the digital age."[37] In her view, "The growing social and legal recognition of new forms of creativity enabled through digital technologies offers an important opportunity to challenge anew claims that globally mandated copyright norms can effect incentives to create that are relevant across geographical, cultural and technological boundaries."[38] In my view, while these issues were not written about Outernet type systems, they also apply

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36. Riley, *supra* note 18, at 1.

37. Ruth Okediji, *The Regulation of Creativity Under the WIPO Internet Treaties* (Minnesota Legal Studies, Paper No. 09-30), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1433848.

38. *Id*. at 2382.

to them. That is because this new medium of connectivity and of transfer of content is set to empower groups that until now had been outside the Internet arena. Indeed, these newcomers will now come into a deeper interaction with the world both as consumers and producers. And by having them join, the internet will become a truly global medium with even less possibility of effective policing and protection. Specifically, I will now deal with four of the most pressing challenges that internet regulation and especially IP regulation is set to pose:

1.   A New Form of "Peer-to-Peer" Sharing

Peer-to-Peer (P2P) sharing over the internet has existed for some decades. The most notable example of this was Napster. P2P sharing still exists today via different websites such as Emeul and Bit-Torrents. But the major difference between the old generation of P2P and the new possibilities for P2P sharing in Outernet type systems is that in the original system one could identify a website (or a legal entity) that could be held responsible for misconduct (including IP infringement). That same entity was also, to a large extent, a "deep pocket" which could be accessed for damages, if and when awarded.

It is clear that a system that circumvents a central internet hub or service provider is less likely to be trackable. The content that is transferred cannot by definition be intercepted given that it does not go to a specific "clearing house" mechanism. Furthermore, the fact that the Outernet is not dependent on search engines in the way that we use them today will further weaken the ability of the regulator or by proxy to oversee what is being transmitted by users. In his research, Goldman, alludes to the misconception according to which, "due to search engines' automated operations, people often assume that search engines display search results neutrally and without bias."[39] He explains that just as other media channels "search engines affirmatively control their users' experiences, which has the consequence of skewing search results."[40]

2.   Transfer of Content

Much like peer to peer sharing, the Outernet could be fertile ground for transferring content. Content and information in this regard are power, and empowering the individual user has its benefits but also its costs. Consider

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39. Eric Goldman, *Search Engine Bias and the Demise of Search Engine Utopianism*, 8 YALE J. L. & TECH. 188, 188 (2006).

40. *Id*.

the ongoing legal battles between Viacom and YouTube.[41]   In these contexts, although the users are the active parties engaged in the potential infringement of content, there is a central hub which can be held liable. It is no wonder as to why this issue has been a crucial point of contention in the Internet for the past decade.[42] Indeed, not all are happy about the "safe harbor" concept that is driven by the notice and take-down mechanism.

In the Outernet (and other systems with a similar structure), there will no longer be a clear hub at which copyright owners can direct their challenges. In fact, it is even much more difficult for the copyright owners to identify the scope of an infringement or to track it let alone its source in real-time.

3.   Trade Secret Proliferation

Trade secrets are in all walks of commercial life. They are there to secure a legitimate edge that one market player might have vis-à-vis his peers. The commercial secret is part of intellectual property regulation and is recognized as such within the TRIPS agreement.[43] As such the trade secrets are now widely protected by national laws around the world. The trade secret protection not only recognizes the right of the owner of a trade secret to protected said information, but also, on the practical level, empowers the owner of said trade secret to exercise such protection by extending a direct legal rivalry between the owner of the trade secret and all parties involved. Namely, the holder can act and sue all parties that are involved in the illegal taking, transferring or use of his or her trade secret. In so doing, the owner of the trade secret can expand his operations and thus reduce the incentive of those involved in the illegal (unlawful) taking of the said secret.[44] With that said, the Internet has become fertile ground for illegally sharing such content, given the speed of communication, the ability to connect with distant parties and the ability to transfer date with

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41.   *See* Amir Hassanabadi, *Viacom v. Youtube—All Eyes Blind: The Limits of the DMCA in a Web 2.0 World*, 26 BERKELEY TECH. L.J. 405 (2011).

42.   Patrick Gibbs, *Video on Remand: A Second Viewing of Viacom's Feud with Youtube and the Case for Casting Off from the Safe Harbor* (Feb. 2, 2011), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1760611. Gibbs observes:

> There is an age-old conflict between traditional copyright industries and new distributive technologies. The conflict stems from abilities to copy and easily distribute protected works. As the cost of copying decreases and ease of access to copyrighted works increases, copyright industries continually lobby for stronger rights. With the emergence of the Internet and software that allows fast and easy duplication of content, copyright owners and Internet service providers lobbied for new legislation governing the use of such software, resulting in the Digital Millennium Copyright Act of 1998 (DMCA).

Id.

43.   Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), 1869 U.N.T.S. 299, art. 39.

44.   *See id.*

much ease. As such, many battles have and still are being fought in this regard. But still in the conventional Internet wherein users can be identified and tracked through their specific Internet Protocol, the illegal transfer of trade secrets is also a challenging arena for potential infringers who might need to go to great lengths to cover their tracks.

But in a world such as that in which the Outernet will function, where Internet content is broadcast to the entire planet, the ability to know who has actually received the broadcast is virtually non-existent. In these cases it becomes exceedingly easy for individuals and corporations to receive information that is "out-there" (for lack of a better term). As such, it would now be much more difficulty to track the destination of the broadcast, and to pin-point the identity of the receiver. In this regard, said receiver could also claim use of publically available information in "good faith." This would make it even harder for the owners of trade secret to pursue and receive legal recourse against end-users.

4.   Domination Over Information

It is very important once Outernet type systems become common place (as I think they will become) over the next few years, that there be continued oversight of the content that is included in the broadcast. Such content needs to remain clear of any political and commercial interests. It must not be dominated by interest groups; rather, its content should be free and open. It should be truly open to all, in an equal manner. Thus, the Outernet should be deemed a "social project," and, as such, be subject to some form of regulative checks and balances, in order to ensure these social interests of openness and freedom of access to information.

CHAPTER THREE

Looking Ahead: Conceptions for Dealing with Outernet Type Systems

The solutions to the challenges that may still come to IP through the Outernet are not in the immediate horizon. In fact, until such time that the Outernet becomes a bi-directional system, the one way broadcast holds a lesser chance for infringement. What is more, given that the outlearnt is more like a "televised" public library, it seems fit that we think about its regulation in these two contexts. That is to say that the Outernet should be regulated in the context of intellectual property by similar rules that regulate television and public libraries.

But, before looking at those rules, I would like to explain why the Outernet is indeed reminiscent of television broadcast and also of public libraries. In fact, there are a few reasons for this:

a. The Outernet is a single direction rather than one directional broadcast. That is to say there is a single broadcast incident to multiple receivers who cannot access the content that is being broadcast to other receivers. In this regard receivers, much like home television, are passive participants in the broadcast, they cannot affect it and their reception does not detract from the quality of the broadcast itself.

b. The Outernet is not a live internet feed. Namely, it is not logged to live site that change randomly; they are rather a snapshot of sites at a given point in time. In this regard, the content is not subject to sudden unforeseen surprises or content, but they can be expected.

c. Given its nature, and current capabilities as described above, the Outernet is not about social networking and rather about bringing information to the wider public. In fact, as mentioned above the Outernet's slogan is "Humanity's Public Library." This is dramatic in its intent to empower the masses. It is also a very good branding ticket which might encourage for information providers to seek joining this noble effort.

d. In both television and libraries, except in cases of live broadcasts, the content is predetermined and preset. In both of these, the content that is being received by the respective users is a snapshot of what the library holds at a given point in time. By definition, the user cannot see beyond what is broadcast at a time that he "tunes-in" or enters the library to borrow a book.

This role of a library that the Outernet is seeking to play is very important. Indeed, generally speaking, digital libraries are now recognized as key actors in the dissemination of information and knowledge. In this regard, Afori observes that "[i]n this digital era, public and academic libraries serve as key players in the promotion of access to knowledge."[45] As stated above, to my mind, there is a strong similarity between the Outernet, and public libraries, wherein both facilitate the access of the masses to knowledge that is stored therein. This similarity between libraries and the Outernet also leads to the bigger question of licensing. That is to say would the Outernet be smothered by inhibiting licensing thus preventing it from broadcasting informative content freely? Would the cost of licensing render the Outernet project a non-viable endeavor? Should this not be preempted in order to evade the risks? I think that the answer to all of the above questions is a resounding "yes." In the context of the libraries, Afori points out that "[t]he digital era has created a profound shift in libraries' practice, finding expression in the transition from purchasing shelf-books to purchasing licenses to electronic resources. These licenses

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45.   Orit Fischman Afori, *The Battle Over Public E-Libraries: Taking Stock and Moving Ahead* (Feb. 1, 2013), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2500205.

control the libraries' ability to pursue their declared goals, and highlight the core problem of private ordering in the information market." [46] In her view, "One of the most acute manifestations of this problem is the common practice, which has taken on world-wide dimensions, whereby these licenses restrict various uses otherwise permitted by copyright law."[47] I agree with Afori's view that restrictive contracts, especially with respect to public e-libraries, should be invalidated by the law because said libraries serve as a "gateway to knowledge and in the promotion of social justice and freedom of speech."[48] Travis goes further still by calling for a copyright reform "to pave the way for digital library projects like Project Gutenberg, the Internet Archive, and Google Print, which promise to make much of the world's knowledge easily searchable and accessible from anywhere."[49] He too is apprehensive about a copyright legal system that "frustrates digital library growth and development by granting overlapping, overbroad, and near-perpetual copyrights in books, art, audiovisual works, and digital content."[50] Furthermore, Balkin emphasizes the need for establishing viable mechanisms, which I world refer to here as channels in which to get the content across to the masses. Balkin explains:

> Freedom of speech depends not only on the mere absence of state censorship, but also on an infrastructure of free expression. Properly designed, it gives people opportunities to create and build technologies and institutions that other people can use for communication and association. Hence policies that promote innovation and protect the freedom to create new technologies and applications are increasingly central to free speech values.[51]

On the regulative level, the copyright system needs to make room for the Outernet concept and needs to give it a substantial maneuvering space in order to empower it to bring inform to the masses much like regular libraries were (and still are) intended to do. Operatively, I would suggest the following types of reforms:

1. To expand the public domain in what I would refer to as Information Oriented Content.
2. To limit the originality requirement in order to keep some content out of the private domain. In this regard, the legislator (and the

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46. *Id*.

47. *Id*.

48. *Id*.

49. Hannibal Travis, *Building Universal Digital Libraries: An Agenda for Copyright Reform,* PEPP. L. REV. (2006), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=860784.

50. *Id*.

51. Jack M. Balkni, *The Future of Free Expression in a Digital Age* (Jan. 29, 2009), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1335055.

courts) should act to reject and block exasperated claims of rights over certain works, if it is deemed that they lack a certain level of originality.

3. To revitalize the fair use doctrine, by disallowing contractual schemes to circumvent them. This revitalization would nullify the chilling effect on market actors. According to Adler et al, "Failure to employ fair use affirmatively and consistently impairs the accomplishment of the academic and research libraries' mission."[52] Specifically, in the case of public libraries Adler also takes note of the "costs associated with seeking permission or making what seem to be tedious case-by-case determinations of fair use."[53]

4. Extending the safe harbor protection (that has been granted to companies such as YouTube), to the digital library arena as well.

5. Providing a unified, limited and non-extendable term of protection for copyrighted works in order to allow digital libraries to operate in a friendlier legal environment. It is worth noting here that the trend to date has been quite the opposite, this is most evident in the Supreme Court's ruling in *Eldred v. Ashcroft*.[54] Travis rightly points out that "[i]ndefinitely renewable copyrights threaten to marginalize Internet publishing and online libraries by entangling them in endless disputes regarding the rights to decades- or centuries-old works."[55]

SUMMARY

In this paper, I have looked at the exciting new medium of space-relayed internet connectivity which is exemplified by the Outernet system. My research has focused primarily on intellectual property issues. I have highlighted the many benefits of this new system (of internet connectivity to the masses), but I have also underscored the challenges that it might pose to intellectual property protected content primarily in the context of copyrights and trade secrets. At the conclusion of this research, I have proposed some concepts for maintaining the balance between the challenges and the benefits that can stem from the Outernet and systems like it.

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52. PRUDENCE ADLER ET AL., FAIR USE CHALLENGES IN ACADEMIC AND RESEARCH LIBRARIES 1 (Dec. 20, 2010).

53. *Id.*

54. 537 U.S. 186 (2003). In this decision by the U.S. Supreme Court, the court upheld the constitutionality of the 1998 Sonny Bono Copyright Term Extension Act (CTEA).

55. Travis, *supra* note 49.