Netflix and Emerging Economies of Media Distribution

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A thesis submitted to the faculty of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of the Arts in the Department of Communication Studies.

Chapel Hill
2011

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Abstract

Ian Murphy: Netflix and Emerging Economies of Media Distribution
(Under the direction of Dr. Richard Cante)

This project investigates how media distribution works as a sustained practice of exchange, and how emerging economies both disrupt and reinforce existing "models." With a foot in the "old world" recalcitrance of the media oligopolists (especially the studios) and in the emerging world of (post)convergent technologies, Netflix provides a useful analytical entrance that begins to describe the conflicts and the stakes that arise vis-à-vis media distribution as online VOD models take hold. Attending to Netflix as a business, as a distribution model, as a disrupter, as an Internet interface, as a content aggregator, as an archive, and as a "technology" opens up a space into both the established relationships among institutions involved in media distribution, and into the disturbances (and subsequent new relations) that entities like Netflix cause. The importance of reconciling these relations—which involve some of our most integral cultural, political, legal, and infrastructural institutions—is beyond question.

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Introduction

This project investigates how media distribution works as a sustained practice of exchange, and how emerging economies both disrupt and reinforce existing models. While it is admittedly too simplistic to assert that the shift to "digital distribution" means that things are no longer actually distributed, there does appear to be a fundamental change in the traditional relations among distribution nodes. In other words, what distribution has come to mean is that things are distributed at a new series of points, and that each of these points seems to be both expanding and multiplying, precisely because the very technology upon which these nodes rely already displaces the nomination of any one node as, for example, producer, distributor, or consumer, somewhere else.

What might Netflix add to the discussions of the emerging economies of media distribution? Since the early aughts, media distribution—especially of digital video texts—has increasingly shifted to an online on-demand model.[1] While the push to give consumers more control over when, where, and on what they can watch is not new—ads for the Sony Betamax championed this kind of freedom in the 1970s—the means of conveying and exhibiting these texts has not yet been completely normalized and captured by industry players. Monetization strategies (including, for example, means of appropriately aggregating and deploying the "long tail" of content), digital rights management, and access to the "last mile" are hardly uncontested. With a foot both in the old world recalcitrance of the media

[1] By on-demand, I mean that one can watch what one wants, when one wants, on as many "A/V devices" as possible. There are a number of variations here, discussed below.

oligopolists (especially the studios) and in the emerging world of (post)convergent technologies, Netflix is a particularly useful analytical entrance that begins to describe the conflicts and the stakes that arise vis-à-vis media distribution as online VOD models take hold.

What is at stake here? First and foremost, the naming any one company and its boundaries, including content, technology, and relational infrastructure (how to get the product to the market). This nomination process is being contested on a number of different planes. With the shift to digital distribution, the tenements of the first sale doctrine are being questioned, and the definitional boundaries of these visual texts are being redefined. The convergence of access providers and content producers (like, for example, the Comcast/NBC Universal merger) creates ongoing debates about who can and should control "the pipes." This in turn has public policy implications vis-à-vis legislation like the National Broadband Plan and the so-called "White Spaces"—the unused part of the spectrum—because these companies have vested interest in who does and does not have access to the means of distribution that they to some degree currently control. In addition, there are questions about which devices will have access to whose content at what time, and to what degree? Perhaps the most compelling stake is that the once distinct boundaries between competitors and collaborators is collapsing, which seems to suggest that a new (if still undecided) relation among nodes is emerging.

There are at least three questions that are central to understanding media distribution: The first: what will be distributed? The second: from whom (and/or what) to whom (and/or what) will this distribution take place? And finally: through what means will this

distribution occur? All three questions are of vital importance, and are almost never mutually exclusive.

Answering the first question is on one level simple: given this project's focus on Netflix, what is in question are commercially available films and television programs, as distinct from the seemingly infinite popularity of the DIY, YouTube forms of content. However, this distinction is complicated in at least two ways. First, with the rampant escalation of, for example, digital piracy, and with the present reality that ten minute segments of copyrighted studio films share online shelf space with clips of the neighbor's cat or hysterically laughing babies, the push by producers for separation of their content—as distinctly professional—from the black hole of amateurism has reached a fever pitch. This push is a dogmatic ideological elitism that uses all manner of disciplinary measures, from coercion to persuasion, and even appeals to moral sensibility: not just that you are forbidden to watch this film, but more importantly that you should feel compelled by a sense that stealing is wrong, and feel that you should be paying for this experience. By watching this film illegally you are costing below-the-line talent their livelihood, even as the studios themselves are more profitable than ever. This is not to suggest that the stories that "Hollywood"[2] tells are somehow better than the hysterically laughing baby—remember John Travolta's *Battlefield Earth*?—or even that Hollywood thinks that its stories are better, but that whatever story it decides to tell should in some way be paid for by those who wish to watch.

[2]An adequate, if reductionist, stand-in—along with "studios"—used here to indicate major commercial content producers. More recently, "Philadelphia"—the location of Comcast's headquarters—has emerged as an all-encompassing term for the cable companies, the "other side" of the discussions about content producers.

At the heart of this separation anxiety are the digital rights that the content, the content owners, the content users, and the content producers all possess, to different and varying degrees. This is a redefinition of form that is in turn creating debates about the appropriate valuation of these texts, the appropriate means of protection for these texts (or, for the producers of these texts), and—pointing to the second and third questions above—the appropriate means of conveyance and exhibition.

The second way this distinction between the commercial and the DIY text (or the "professional" vs. the "amateur") is complicated is through availability: an unprecedented amount of titles and works are now accessible through an unprecedented amount of (legal and illegal) channels. This may only be a difference in scale and degree (as long as there is a recording device—be it camera, VCR, or pen—there is media piracy), if not necessarily in kind (the studios, for example, have hardly lost their foothold in the film industry as the gatekeepers of content; nor have the cable companies and (or) ISPs yielded command of particular types of access). Nevertheless, the traditional profit maximization strategies for content owners and producers—the so-called "windowing" system—is necessarily being rethought, because the key component to the success of that system—scarcity—is lapsing into obsolescence. Or, at the very least, the meaning of "scarcity" is shifting.

But this is not a project about piracy, in the sense that "piracy" is an arbitrary trope just as easily replaced with "borrowing," or "sharing," or "remixing," or "disruptive innovation," or "creativity," because each term judges (from various discrete angles) the process in question. This project focuses on that process—"media distribution"—about which piracy and all other associated terms are a part.

At issue in these debates about separation and scarcity is a new conception of the connections among content, technology, and businesses. The older or more traditional distribution logics between the independent films, the Hollywood films, and the international films are built into Netflix; these logics are converging within Netflix and then are being deferred somewhere else. In a sense, from its inception Netflix was already anticipating itself by complicating its own boundaries in time, and with other older film formations. It is called Netflix not (only) because it is a web-based service that helps find, order, and prioritize films titles that will then be sent to you via mail; instead, it is called Netflix precisely because Netflix anticipates the capacity to actually watch the films via the web, while at the same time playing with the idea of the "network," whereby there is an illusion of a single Netflix which is already deferred into a series of network nodes (the recommendation system). There is no longer, therefore, a one-size-fits-all approach to filling Netflix's "shelf space"; instead, "my" Netflix is inevitably different from "your" Netflix, and in fact the stocking of my Netflix shelf space is deferred by Netflix itself to the film ratings and reviews of all available films, given certain categorical or generic values and similarities. Netflix also appears to claim its own authority as a curator precisely because its holdings do not just come from the festival circuit—the traditional way to find foreign films and independent films—or from what is popular—the traditional way brick and mortar stores work; instead there is a different logic at work in Netflix that holds all of this together. This is seen, for example, in the choice of a subscription pay model—as opposed to a la carte—where all content, for the consumer, is valued equally, and is also treated on the site with equal weight.

The rationale for looking at Netflix, therefore, will be shown in the way that Netflix itself is looked at and scrutinized: Netflix is not an independent actor; instead, it complicates the relationship between any one company and other companies (as both competitor and as collaborator, often at the same time). Netflix role as a curator is merely one example; these complications will also become clear below, in the discussions about the Netflix queue and about the proprietary recommendation system as well. In other words, attending to Netflix as a business, as a distribution model, as a disrupter, as an Internet interface, as a content aggregator, as an archive, and as a "technology" opens up a space into both the established relationships among institutions involved in media distribution, and into the disturbances (and subsequent new relations) that entities like Netflix cause.

For instance, Netflix is currently indirectly involved in—and could be at the ideological center of—unresolved litigation between Comcast and Level 3 Communications about the capacity and regulation of "the pipes," in other words, about the oft evoked ethos of "net neutrality."[3] Its successful negotiations for digital rights of content have caused major studios to reassess the content valuation process. Its proprietary recommendation system, Cinematch (in some ways the life source of the business end of Netflix) became the ticket to a programmer smorgasbord and collective free labor fiesta during the now infamous "Netflix Prize," where Netflix outsourced a search to collaboratively improve the process by which people were being matched with films of potential interest.

[3] In short, the idea that all content on the Internet should be treated equally. In the context of this paper, Net Neutrality concerns the ability of an ISP to discriminate (block, redirect, etc.) against any particular form of content. As Eli Noam writes, there are a number of working definitions of the term, but perhaps the two most important for "society" are "no selectivity by the carriers over content they transmit," and "no blocking of the access of users to some websites." From Eli Noam, "A third way for net neutrality," *The Financial Times*, 29 August 2006, http://www.ft.com/cms/s/2/acf14410-3776-11db-bc01-0000779e2340.html#axzz1EpmSes18

Netflix also helped pioneer how these media texts are distributed through the Internet with its subscription-based, DVD-by-mail rental model. Cinematch is crucial here for its automated inventory management: its in-stock filter eliminates the frustration of finding titles checked out, and it employs the entire content library by focusing more on the "long tail," thereby reversing the traditional model built entirely around new releases. Its queue works not only as a placeholder for individual user memory, but the aggregated data allows for more effective allocation of the DVDs, as administrators can see what titles are "trending" when and where, and act accordingly by transferring physical discs to the relevant regional warehouses.

As a result, Netflix has achieved astounding levels of growth. It has jumped from 700,000 subscribers in May 2002 (when it announced its IPO) to 20 million at the time of its 10K filing in February 2011. In 2010 alone, approximately 7.7 million people signed up for its service, more than doubling the 2.9 million subscribers gained in 2009. Netflix has recently expanded outside the United States by introducing a streaming-only service in Canada, and plans to expand to other (unspecified) national markets later this year. In addition, the common stock price increased tenfold between October 2008 and February 14, 2011, when it peaked at $235.

While all of these emergences, shifts, changes, "pioneerings," disruptions, and crises that Netflix has (at least in part) caused are important, and while they do deserve analytical attention at some length, I will attempt to avoid the reductionist determinism that this sort of language provokes. Plenty of literature—academic, journalistic, "popular"—exists that expounds the uniqueness of the specificity of our time,[4] but although the uncertainty about

[4] See for example, Chris Anderson, *Free: The Future of a Radical Price* (New York: Hyperion, 2009); Anderson, *The Long Tail: Why the Future of Business is Selling Less of More* (New York: Hyperion, 2006);

"what's happening here" in the "digital age" is palpable, at the same time these changes are also couched within a much longer history that suggests in no uncertain terms that "we've been here before." Instead, this project takes the technological as one approach among many—including political economy, public policy, politics, business and industry practices, and economics—all geared, through Netflix, towards an understanding of how media distribution evolves, and how it is evolving presently.

Ken Auletta, *Googled: The End of the World As We Know It* (New York: Penguin, 2009); Clayton Christensen and Michael E. Raynor, *The Innovator's Solution: Creating and Sustaining Successful Growth* (Boston: Harvard Business School, 2009); Jon Reiss, *Think Outside the Box Office: The Ultimate Guide to Film Distribution in the Digital Era* (Los Angeles: Hybrid Cinema, 2010); Clay Shirky, *Cognitive Surplus: Creativity and Generosity in a Connected Age* (New York: Penguin, 2010); and Chuck Tryon, *Reinventing Cinema: Movies in the Age of Media Convergence* (New Brunswick: Rutgers UP, 2009), among others

Netflix as Business

Netflix was founded by Reed Hastings in 1997 as a movie-by-mail rental service, and as an answer to the vexing problems of movie rental late fees.[5] Netflix entered an existing home video rental industry riddled with "mom and pop" retail stores and dominated by Blockbuster. It tried to differentiate itself in a number of ways, first and foremost with the "convenience" of the "online rental experience." Customers would search the website, choose a film, and within a few days the film would be delivered by mail. Netflix began by renting DVDs—then a relatively new and promising, but as yet unproven format—which are smaller, lighter, and cheaper to send via the Postal Service. As Hastings noted: "We were targeting people who just bought DVD players. At the time our goal was just to get our coupon in the box. We didn't have too much competition. The market was underserved, and stores didn't carry a wide selection of DVDs at the time."[6]

The basics of the website itself—a search engine and a queue— has not changed (although its sophistication and "accuracy" has certainly evolved), but the pricing apparatus was initially modeled on traditional brick and mortar rental stores: a $4 rental charge, plus a $2 shipping and handling charge, and a specific due date (with the dreaded late fees as penalty for late return). This lasted for a brief period of time, as Hastings and others realized that, given the longer delivery times (compared to the traditional rental experience of going

[5] "Legend has it" that Hastings found an old, forgotten rental copy of *Apollo 13* in his closet that had accumulated somewhere in the neighborhood of $40 or $50 in fees.

[6] Willy Shih, Stephen Kaufman, and David Spinola, "Netflix," HBS No. 9-607-138 (Boston: Harvard Business School Publishing, 2009), p.3

to the store), Netflix's value was in its ability to allow customers to have DVDs in their homes at all times, and they quickly switched to a pre-paid subscription service, minus late fees. Netflix's next trick was to offer the "unlimited" option, thereby adding a high-volume customer base for whom the cost of individual rentals (and of course the late fees) far exceeded the value of the immediacy of the traditional stores.[7]

A major obstacle for Netflix was (and is, though presently for very different reasons) content acquisition, not only in terms of individual costs of each film—initially, Netflix bought DVDs wholesale from very few distributors for minimal discounts—but also because these up-front costs forced a restrictive selectivity when actually choosing which movies to buy. Netflix once again switched its business strategy, recognizing that the rental business (as a part of the film industry) was heavily based on personal relationships through which more favorable arrangements could be made with, for example, the studios themselves. Enter Ted Sarandos, who left Video City (a U.S. video rental chain) in May 2000 to become Netflix's new chief content officer. Sarandos brought his contacts and relationships with him, and "[w]ithin a year, Netflix had negotiated direct revenue-sharing agreements with nearly all the major studios,"[8] which meant a reduction in up-front costs for Netflix in return for a fee paid to the studios on the number of rentals of a given studio's films within a given period of time.

Rental models of distribution have a long history, although renting pre-recorded films, on VHS or DVD, to individual consumers is a relatively recent phenomenon. The more traditional model has been for studios to rent directly to commercial public exhibition

[7] Ibid, p.4-5

[8] Ibid, p.6

venues. At issue in differentiating between commercial and private exhibition (and between buying and renting) is a distinction between the right to exhibit a film and the right to own a film, a distinction that has shifted in meaning since the beginning of the 20th Century, when the Edison Trust (otherwise known as the Motion Picture Patents Company) retained absolute control over production, distribution, and exhibition. This control would allow the Trust to impose fees on theater owners and to shift films around the country to accommodate a "rapidly expanding audience."[9]

This debate repeats itself (for film) during the heyday of Adolf Zukor, Paramount, and the studio system. Battles waged to control the big screen. On one side, the Independent theater owners, who were forced by Zukor to adhere to block scheduling (purchasing a group of films, often blindly, or without preview), and on the other side the ideological push for vertically integrated studios that own the theaters. By the 1940s, "[i]n America's ninety-two largest cities, the studios owned more than 70 percent of [theaters]. And though these first-run movie palaces comprised less than 20 percent of all the country's theaters, they accounted for most of the ticket revenue."[10] The antitrust breakup of the studios in 1949, along with the rise of television in American households in the 1950s, created a (somewhat temporary) loss of exhibition control and of guaranteed audience attention for the content producers. What emerged was not only a crisis over who could show what, but a shift in the very battleground itself, from the public space of the theater to the home.[11]

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[9] James Lardner, *Fast Forward: A Machine and the Commotion it Caused*, (Chesterfield: Marsh Technologies, Inc., 2002), p. 155-7

[10] Ibid. p.163. Also see Eli Noam, *Media Ownership and Concentration in America* (New York: Oxford UP, 2009).

[11] As much as this history is useful for background, it is equally important to juxtapose the historical debates with the contemporary debates, in order to get a better grasp of how Netflix embodies the claim that it "anticipates itself." In other words, as much as these debates historically take place within their specific place

The studios cared about the ultimate retention of rights, especially in the face of the second anti-trust movement (the first had broken up the Trust in 1915), which "compelled the studios to divest themselves of their theater chains."[12] The rental option was therefore a much more attractive proposition for studios[13], because while losing control over the theaters (even temporarily) was a blow to studio power, the theaters would not operate without the films themselves. With the introduction in the 1970s of the VCR to the individual consumer— which launched a "wave of piracy worse than any the studios had seen before"[14]—a new dimension was added to the rights retention problem. Not only did studios have to worry about the unauthorized exhibition and "theft" of films by theaters, they were now forced to directly engage with the consumer as a possible "pirate." In the face of such a threat, studios became reluctant to produce pre-recorded VHS tapes of their films, which would only solidify the place of the VCR as an institutionally sanctioned technology, and undoubtedly lead to more production of VCRs, lower costs to consumers, and therefore more video recording devices in more homes in America (and thus a greater threat of piracy).[15]

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and time, they are also about deferment of the infringing future technologies, and the uncharted markets that these technologies engage, in favor of shoring up control of the present markets to more fully exploit those emergent markets.

[12] Ibid, p.156. Expanded and updated accounts can also be found in Noam, 2009; Toby Miller, et al., *Global Hollywood 2* (London: British Film Institute, 2005); and Edward Jay Epstein, *The Hollywood Economist: The Hidden Financial Reality Behind the Movies* (Brooklyn: Melville House, 2010).

[13] As Lardner writes, "Rental is by nature a more intimate business arrangement than sale. The tie between seller and buyer ends with the transaction, and the buyer is free to pass his property on to someone else. With rental, the transaction is just the beginning of the relationship, and the lessor, if market conditions are right, can dictate elaborate instructions to the lessee about how he must conduct himself." p.156

[14] Ibid, p.156. For alternative takes on piracy, content capture, and idea sharing, see Lawrence Lessig, *Free Culture: The Nature and Future of Creativity* (New York: Penguin, 2005); Lessig, *The Future of Ideas: The Fate of the Commons in a Connected World* (New York: Random House, 2001); Rick Levine, *The Cluetrain Manifesto* (New York: Basic, 2009); Miller, et al., *Global Hollywood 2*; Shirky, *Cognitive Surplus*.

[15] This act of barricading all intellectual property—including content—by the studios seems to be the converse of Netflix's ability and willingness to anticipate itself, because it is an act that tries to firmly etch out and pin down the relations of the present, for fear of threats (like the VCR) in the future. By contrast, Netflix is built

Nevertheless, there was indeed a demand for pre-recorded studio films on the consumer market. Chief among those to answer this call was Steven Roberts, an executive of Twentieth Century-Fox Telecommunications (a subsidiary of Twentieth Century-Fox). In July 1977, Roberts signed a deal with a small video company in Farmington Hills, Michigan, Magnetic Video— run by a man named Andre Blay, who had written each of the Hollywood studios the previous year about the possibility of commercially selling movies on tape—for non-exclusive rights to produce videocassette duplications of 50 of Fox's (older) films. After investing in a warehouse where he could record and store films wholesale, Blay began to sell, first to record stores and appliance stores, then to VCR manufacturers (which would offer "tie-in deals" for free or discounted cassettes with the purchase of the machine), but perhaps most importantly was a direct-mail joint sales effort with TV Guide named the Video Club of America. A historical precursor to Netflix, the Video Club offered a $10 subscription fee for individual consumers, who could then purchase movies for $49.95 each ($69.95 if the movie ran over two hours and thus required two tapes). [16]

Netflix has carved out its space in the rental market, but the market for renting to individual consumers was not initially a self-evident (or officially "chartered") proposition for the studios. Around the same time Blay was striking gold with the Video Club and sales of movies, a man named George Atkinson also had a novel idea. He owned a small-time business in Los Angeles, renting video equipment and old, non-copyright movies to hotels and pizza parlors—and to individuals for private parties—who would then exhibit free

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around the inevitability of the very threats—new devices, new methods of encoding and streaming—that the studios try to quell. This inevitability is always displaced elsewhere: with the companies producing the devices, or the capacity to house the large server space needed for streaming, or even to some extent the content producers themselves.

[16] Ibid, p.159-60. For an example of comparative pricing models of contemporary media texts, see Anderson, 2009. For an example of production cost negotiations, see Epstein, 2010.

entertainment for their customers or friends. If, he reasoned, there was a market for renting video equipment, there might be a similar market for renting studio films as well. He bought all fifty available Fox titles from a "brown-goods dealer," and established a rental club ($50 for annual membership, $100 for lifetime membership, $10 per film per day) without the expressed, written consent of any of the studios. Atkinson was saved from any potential lawsuits by the so-called "first sale doctrine," which allows for anyone "who legitimately acquires a book or other form of copyrighted work to dispose of his particular copy as he wishes. Once the first sale has occurred . . . the copyright owner loses control of that copy."[17] This doctrine is one of the key reasons that the studios did not initially consider renting to be a profitable enterprise, since it would be extremely difficult to convince retail rental stores to share their profits with the studios.

With the shift to digital distribution, the tenements of the first sale doctrine are being questioned, and the definitional boundaries of these visual texts are being redefined. These debates and negotiations mainly concern "form." By form I mean here both the technological format and the "institutional format": the experience of the film, the normalized filmic protocols that involve the public and the private, the particular venue, the concessions (in both senses of the word), and most importantly the act and the nature of copyright capture.[18]

Nearly all mass media (and) information technologies historically are controlled, are tamed, and become exclusive. Each "new innovation"—printing press, typewriter, radio,

[17] Ibid, p.165. For more on copyright, see for example James Boyle, *The Public Domain: Enclosing the Commons of the Mind*, (New Haven: Yale UP, 2008); Lessig, 2001, 2005, 2008.

[18]More work is needed here to parse through precisely how these institutional formats matter. Digital Rights Management, for example, appears to be a necessarily paradoxical measure; by instituting itself as a blockade against copyright infringement, it only seems to fuel the innovation to get around DRM in the first place.

film camera, television, the Internet—seems to follow a relatively similar cyclical pattern as its predecessor: the public introduction of the "new thing" is preceded by R&D investment, often funded—or appropriated—by existing hegemonic institutions; a noisy clambering for containment ensues, in the form of patents, copyrights, trademarks, and political and regulatory measures; and a protocol is mandated and normalized in a further effort to restrict its (commercially exploitable) uses. This technological history is characterized in large part by political, legal, economic, and cultural exploitation. As co-inventor of the Phantoscope Charles Francis Jenkins—whose partner sold out to Edison, forcing Jenkins to sell the patent interest in the first motion picture projector—said, "It's the same old story . . . the inventor gets the experience, and the capitalist gets the invention."[19]

The so-called "format wars" exemplify these sorts of debates. At any given historical moment there are always a number of competitors looking to normalize (contractually, legally, socially, and culturally) their specific mode of presentation, but usually only one format is institutionally sanctioned, while the losers lapse into obsolescence. Toshiba found this out in March of 2008, when it officially abandoned its HD-DVD format, conceding victory to Sony's Blu-ray. This example is significant for a number of reasons, perhaps the most important of which is the utter insignificance of the "war" in the first place. Unlike previous format wars (discussed below), Blu-ray vs. HD-DVD was not about a particular disruption in the way that films are experienced (like, for example, the DVD had replaced the arduous "fast forward/rewind" functions of the VHS with "scene selection"). Instead, the Blu-ray/HD-DVD competition was almost entirely about improving the rather nebulous "picture quality" and "sound quality" of an existing technology for a public that for the most

[19] Tim Wu, *The Master Switch: The Rise and Fall of Information Empires*, (New York: Alfred A. Knopf, 2010), p.64. See also Winston, 1998; Raymond Williams; Henry Jenkins, 2006; Noam, 2009; et al. for historical models of technological change.

part either could hardly tell the difference or did not care enough to replace one DVD player with another.

In addition to lacking a truly disruptive or innovative hook, the Blu-ray/HD-DVD competition emerged in the public at the same time that Internet video and digital distribution was taking hold. The content producers had reached a troubling crossroads: much of their profit is generated with DVD sales, and yet since at least the late 1990s (and especially with Napster) it had been clear that content could be distributed (almost) freely over the Internet. The convenience of availability, it seems, trumps the quality of presentation.

This is not the first time the market shifted in favor of convenience. "Technically speaking," the Sony Betamax offered better quality picture, better cassette design, and better video engineering than JVC's VCR.[20] At stake in the invention and adoption of the VCR was not merely convenience, however; instead, what was at stake in these debates during the 1970s and 1980s was strikingly similar to the current debates about media distribution: availability and separation. The ability of a consumer to record, to capture, the copyrighted content of the producers was an extraordinary development, one that the studios fought all the way to the Supreme Court (and just narrowly lost, in a five to four decision handed out on January 17, 1984[21]). This decision had some major implications for the way these forms of technology were to be perceived in law and in industry. According to James Lardner, Justice John Paul Stevens's opinion asserted that "[t]ime-shifting . . . was a 'noncommercial,

[20] For a more detailed analysis of the war between the Betamax and the VCR, see Lardner, 2002.

[21] Ibid., in particular p. 255-264.

nonprofit' activity with 'no demonstrable effect on the potential market for, or the value of, the copyrighted work.'"[22]

The Blu-ray/HD-DVD and the Betamax/VCR competitions are not meant to merely illustrate the repetition of history—these examples are only tangentially related, to begin with—but instead to point to the conditions of possibility for these kinds of controversies to begin with. In other words, the most important element of commonality between these two examples is their threat to the traditional mode of profit generation, known as windowing: introduction of multiple platforms, through which the same content can be shown, during exclusive temporal windows (in other words, staggered release). As much as both the VCR and the Internet threaten studios with copyright theft, perhaps more important to content producers and owners is that the unauthorized capture of their content means that they lose control over when, where, and how the content can be seen. Loosely speaking, the traditional window system follows a familiar path: a film is released in theaters for a period of time, is removed from circulation completely for another period of time, is released on DVD, then is later released on premium cable, then basic cable, then for free on broadcast networks. The digital distribution platforms have for at least the past decade complicated this process by introducing new, legal windows within the current window chain and by disrupting the window chain entirely with illegal film uploads—which takes advantage of the "one-to-many" (or one-to-"all"[23]) distribution possibility of the Internet. In other words, access to the Internet means access to the film at all times, which throws the promise of

[22] p.257

[23] All who have access.

window exclusivity—the lifeblood of the theaters, for example, which can boast that you can "see it here first"—"out the window."

Does this necessarily mean, however, that the end of windowing is nigh? As Jeffrey Ulin, a media executive and lawyer, writes in his book *The Business of Media Distribution*, "the notion of on-demand Internet premiers . . . is now not only feasible, but potentially poses one of the greatest threats to movie windows by any technology recently created."[24] Perhaps so, but this sort of language exemplifies in part why understanding the relations of media distribution have become so convoluted, because it already assumes that any new thing is a threat to destroy the existing model, when in fact what the industry has shown through time is that there is a redistribution of control. This redistribution does not belie a particular form of destruction—it is true that, for example, brick and mortar retail rental stores and chains are going out of business, and with them people who relied upon that particular model of retail for their livelihood—nor does it suggest a kind of one for one replacement with computerized autobots: that somehow for every empty retail store front there is a Redbox machine in the local grocery store, or that for every shuttered independent theater there are a few more open Netflix accounts (or some other equivalent, destructive substitution). Rather, understanding these relations as shifting, and not from the perspective of some kind of eschatological Armageddon may offer release from the perpetuation of the latter rhetoric by the institutions in control of the very content and means of distribution in the first place.

This kind of rhetoric is a mechanism of defense from the invasion of "new media" (an equally loaded term in the hands of the critical conservatives or the optimistic revolutionaries) that has been both normalized by, for example, "Hollywood politics"—Chris Dodd in his first televised speech as the chair of the MPAA, said that among his top goals is

[24] p.35

to educate the public about the dangers and the wrongs of piracy[25]—and has been scoffed or ignored (an equally problematic position) by those who freely take these works without acknowledging the legitimacy of (some) of the claims to maintaining control of private property. Dodd's promise for more education (taking up the torch carried by past chairmen like Dan Glickman and Jack Valenti) is in one sense a slap in the face to the public, because it seems to assume—in the rhetoric of the majesty and mystery of new media—that people do not understand what they are doing when they download a film.

Then again, Hollywood is a master of illusions, and the desire to be a part of these illusions—on any level—has proven palpable. Studios, for example, are notorious for raising outside capital to help fund film production. On the one hand, civilians and hedge funds who heed the call are responding to a desire to be a part of the production process (and the potential for a taste of the glory of fame and fortune); on the other hand, they assume return on investment, which for a variety of reasons never comes.[26] In December 2008, Edward Jay Epstein asked a studio corporate finance veteran the following question: why do studios want outside funding at all? The response he got was indeed revealing:

> No journalist who has ever written about movie financing has ever bothered to ask the question: why are the world's largest and most solvent media companies raising outside capital? Journalists all seem buy, hook, line, sinker, and press release, the line that we (studios) need money. . . . In my thirty years in this business I have never ceased to be amazed by this gullibility.[27] [sic]

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[25] Motion Picture Association of America, "New MPAA Chief Senator Chris Dodd Delivers Inaugural State of the Industry Speech," 29 March 2011, http://www.mpaa.org/resources/0256d5f8-8286-4ec5-8abe-db38770902b6.pdf
See also, David Kravets, "Former Sen. Chris Dodd Named Chief of MPAA," *Wired*, 1 March 2011, http://www.wired.com/threatlevel/2011/03/dodd-mpaa/

[26] For more on Hollywood's financial sleight of hand, see Edward Jay Epstein, *The Hollywood Economist: The Hidden Financial Reality Behind the Movies*, (Brooklyn: Melville House Publishing, 2010)

[27] Ibid, p.109-10

The point here is not to paint studios as excessively greedy, or to suggest that they should not be allowed to operate this way; the point instead is to provide a framework for understanding how and why certain debates or issues related (either directly or tangentially) to media distribution have been, and will be, played out, and how they are playing out even now.

Of course, lest the complicated set of relations involved in media distribution be forgotten, this ability to appropriate language and action extends beyond the studios and Hollywood. Underwriting the recent video codex controversy between Apple and Google (among others), for example, is a similar sentiment. The H.264 codec (a form of video compression) has become an industry standard for encoding video online: it is used by, among others Apple's iTunes, Microsoft's Silverlight (the software used in Netflix's streaming service), the Blu-ray disc format (and Blu-ray players) and, oddly enough, Google's YouTube to encode videos to their respective sites.[28] Venders and commercial users of H.264 are required to pay patent licensing royalties. Google has recently released an open-source, royalty-free codec called VP8, and has since been subject to a series of attacks by MPEG-LA—a "patent-pool organization" backed by many of the major technology and software companies, including Microsoft and Apple—which alleges that VP8 is in violation of the H.264 patent. The Department of Justice has since launched an anti-trust investigation into whether or not MPEG-LA is unfairly and illegally trying to prevent the rival technology from being used by wrongly (and knowingly) alleging these patent violations. At stake here, at least according to the Wall Street Journal, is "whether anyone will own rights over the

[28] Here again is an example of the all important, seemingly paradoxical collaborative competition—a part of the emerging, complicated relationships among businesses, technology, and content that Netflix embodies. This will be further illustrated below, in the discussion about Netflix and Amazon, where businesses compete against each other with similar content services (via similar, but distinct, technologies of conveyance and exhibition) while at the same time collaborate through technology (as when Netflix enlists Amazon to house its technical infrastructure in the cloud).

creation and broadcast of online video in the next major Web programming language, called HTML 5."[29] This is in some ways the heart of the debate about net neutrality, because it affects what is and is not allowed to be put on screen, and who does and does not have access and control over these encoding mechanisms (whether for pay or for free).

[29] Thomas Catan, "Web Video Rivalry Sparks U.S. Probe," *The Wall Street Journal*, 4 March, 2011, http://online.wsj.com/article/SB10001424052748703752404576178833590548792.html

Current Configurations of the Industry

Netflix's model for media distribution—web-based subscription rental service—is one among many. There are at least three other models of (this form of) VOD: the advertiser-supported model (Hulu), the digital file ownership model, where the films or shows are downloadable to a limited number of devices (Apple's iTunes), and the online video rental and "pay tv" model, "characterized by limited rights and finite durations common to traditional rentals."[30] In addition to Hulu and Apple, there is an expanding list of current and former competitors jockeying for distribution position. There are a few stand-alone online VOD services like Starz's Vongo, BestBuy's CinemaNow, and WalMart's Vudu which have price fluctuating options: one can rent via a pay-per-view system, download to a limited number of devices for an increased fee, or even download to burn to a DVD for another rate increase. In Netflix's end of year shareholder's report released in January 2011, Hastings envisions the levels of competition for the future:

> The long-term threats to our profit stream haven't changed much over the past year. There is the substitution threat of better offerings from MVPDs[31], with free TV Everywhere, in particular, making supplemental services like Netflix and Hulu Plus less desired. There is the threat of growing piracy from websites like Megavideo and others, especially in international markets. There is the threat of direct competition, such as Hulu Plus or perhaps HBO Go or Amazon. There is the content cost threat: that content pricing uniformly rises so sharply that we can afford fewer titles, thus our service becomes less amazing to consumers, and our growth is slowed. Finally, there are various ISP-related threats . . .[32]

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[30] Willy Shih, Stephen Kaufman, David Spinola, "Netflix," HBS No. 9-607-138 (Boston: Harvard Business School Publishing, 2009), p.11

[31] "Multichannel Video Programming Distributor," a service provider that delivers video programming; these can be cable companies (Comcast, Time Warner), satellite providers (DirectTV), or wireline video providers (Verizon FiOS—Fiber Optic Service—or IPTV—Internet Protocol Television)

[32] From Netflix's annual shareholder letter by Reed Hastings and David Wells, p.8

It is important to note not simply the differences between the actual distribution models, but also that the companies behind the models are themselves uniquely positioned within the industry. This recalls the collaborative competition mentioned above; the positions of these companies are unique not only because of their differentiated services, but more importantly that the nominal position of any one company changes drastically with respect to which relationships one examines. Not all the competitors, in other words, are simply content aggregators; many are cable companies, ISPs, electronics manufacturers, or even direct subsidiaries to the studios themselves. The TV Everywhere "threat," for example, is cable's answer to the Internet-based companies VOD models: the crux of TV Everywhere—started by Time Warner CEO Jeff Bewkes, who later partnered with Comcast, the largest cable provider in the country—is that consumers can get cable television content on any device, given their ability to authenticate subscription to the provider.[33] HBO, a company that has nearly always been buried behind the premium pay wall of cable television, has been particularly reticent to sign over any digital rights of its original content for instant streaming on Netflix, and has in fact retaliated with HBO GO, which is its own version of the instant streaming model.

Like TV Everywhere, however, one must be a subscriber to HBO (and hence have a subscription with an MVPD) to have access to HBO GO. Similarly, subscription to Netflix presupposes an Internet connection; therefore, as necessary as it is to map and differentiate the models for delivering content, equally important (and in some ways more primary) is the

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http://files.shareholder.com/downloads/NFLX/1239617789x0x461760/11046ba9-7ea4-4b77-b1bd-a3035fc913d5/Q1%2011%20Letter%20to%20shareholders.pdf

[33] Chris Albrecht, "Everything You Need to Know About TV Everywhere," 23 June 2009, http://gigaom.com/video/what-you-need-to-know-about-tv-everywhere/

infrastructural topography that these companies trace, and the individual and relational positions that they occupy.

In addition, the technical and formal specificities of each of these models—and of the various technological mainstays that these companies employ—have on numerous occasions informed the innovation of the other's distribution. Multiple distribution platforms are the basis for the windowing strategy, for example. As has been suggested above (with what seems to be a cannibalization of Google's YouTube by introducing the open-source, royalty-free VP8), some of these models are competitors, they are at the same time often collaborators. There is even a certain measure of mutual necessity between "competitors." Netflix has, for instance, "moved its video encoding farm to AWS[34] first in 2009, then large-scale log and analytics based on Hadoop [a software framework that supports data-intensive, distributive applications] were put in place. In 2010, Netflix jumped its on-demand streaming to AWS, and it's in the final process of moving more than 80% of its Web functionality onto AWS in the coming weeks." In effect, Netflix has outsourced a good portion of its infrastructure to a company that it is in competition with in the streaming market.[35] In addition, media distribution is burgeoning on the premise of interoperability, which means, for example, that Apple allows Netflix films to be screened instantly on its Macbooks, using the Microsoft Silverlight software. This interoperability is a crucial distribution component

[34] Amazon Web Services. Further discussion of AWS is below.

[35]Amazon has recently improved its "Amazon Prime" service with an "unlimited streaming" option for those who pay the $79 a year subscription (which, in fact, is cheaper per year than Netflix's $7.99 streaming only option). For more on Amazon Prime, see Jacqui Cheng, "Amazon Takes On Netflix With Movie Streaming Service," *Wired*, 22 February 2011, http://www.wired.com/epicenter/2011/02/amazon-takes-on-netflix/

going forward; according to its website Netflix alone is able to be streamed by over 200 devices.[36]

[36]From the Netflix "Media Center": "Among the large and expanding base of devices streaming from Netflix are Microsoft's Xbox 360, Nintendo's Wii and Sony's PS3 consoles; an array of Blu-ray disc players, Internet-connected TVs, home theater systems, digital video recorders and Internet video players; Apple's iPhone, iPad and iPod touch, as well as Apple TV and Google TV. In all, more than 200 devices that stream from Netflix are available in the U.S. and a growing number are available in Canada." http://www.netflix.com/MediaCenter

Netflix "as" Technology

Given the ubiquitous use of devices, how might Netflix itself be conceived as technology in all its various iterations, meanings, connotations, and definitions, from the most rudimentary popular understanding of technology as electronics and devices to the most fundamental, basic (and abstract) understanding of technology as applied knowledge or as the human ordering and organization of space and time? For one thing, given its meteoric rise in popularity within the past few years, Netflix is in some ways becoming synonymous with "streaming." While on the one hand this statement is hyperbolic, it is precisely the kind of rhetoric that pervades much of the current popular press (Facebook is "revolutionary," Google is "changing the world"). And yet there is a grain of truth here, which points to the specific ways that Netflix can be (and is) thought of by those who created it, use it, regulate it, modify it, as a technology—regardless of whether or not these thoughts and claims are "true"— given the shifting online (industrial, cultural, social, economic, political) trends.

Take, for example, Netflix's queue and proprietary recommendation system. Not only is Cinematch, as mentioned before, an automated inventory management system, it is also an artificial personality (our tastes diverged, "my" Netflix is completely different from "yours") and a navigational interface by which I "chart a course" to satisfaction (through humor or suspense or anxiety or depression or exhilaration or "wonderment" or whatever mood I might be in or emotion I might desire). The queue serves as a kind of memory placeholder, but the move to streaming vacates the queue of the same kind of inventory significance that it held when the service was solely DVD-by-mail, because the order of the

"instant queue" matters little when the movie or show is immediately available. The conventions of narrative film and television and their generic "categories"—that lie at the heart of the "success" of Cinematch—the neatness of the queue's linearity, the ease with which one is able to navigate the website, the change in policy that Hastings implemented that makes it extremely simple to opt out of the service altogether (and to reenter without having to "start over" because even a defunct or abandoned account is archived and can be reopened)—in short, all of the elements of the "Netflix experience"—attest to the ways that Netflix is "technological."

In addition, in the spirit of the great tropological ethos of the Internet as the ultimate "democratic technology," as web-based companies like Netflix mature, according to Tim Wu[37], they appear to remain "open" despite having gained a considerable level of dominance. Netflix maintains a robust blog that not only details upcoming service improvements but also welcomes user suggestions. As mentioned above, Netflix also "crowdsources," in a sense, some of its technical aspects, including the infamous "Netflix Prize" –awarded to the team that could most effectively improve the algorithm used in its proprietary recommendation system—and its Application Programming Interface which, according to its website, "allows anyone to build their own Netflix-integrated applications for the web, the desktop, mobile devices or the TV." Even the very idea behind Netflix (especially the streaming service) –access to a service as opposed to private ownership of individual media texts—revolves around a particular idea of openness.

[37] Tim Wu and Sarah Lacy, "The Future of the Internet," http://bloggingheads.tv/diavlogs/32766. For alternative approaches to media and technology history and theory, see (among others) Lisa Gitelman, 2006; Jennifer Slack and J. MacGregor Wise, 2005; Mark Hansen, 2006; and Brian Winston, 1998. Further engagement with technological theory should be pursued in later work on this project.

Perhaps most important to Netflix "as" technology—in particular this idea of remaining open—is the move to the newest iteration (or at least its embrace of the newest buzzword) of the Internet: "the cloud."[38] According to its 10K filing, Netflix "outsources a huge portion of its operations to a division of Amazon called Amazon Web Services. AWS became a Netflix vendor in 2009, and has taken on an increasingly larger role in managing the 'majority of our computing.'"[39] In fact, according to at least one source, Netflix has become the largest commercial enterprise currently operating in the cloud.[40] It seems that this is part of the ethos of the "new paradigm" of media distribution, the VOD: what I want, when I want it, wherever I am, on whatever I'm using. But this paradigm, if this example is any indication, suggests that such an ethos extends beyond providing a particular user experience, but in fact becomes a corporate practice.

[38] Loosely speaking, the cloud operates as a kind of centralized storage system, from which users (individual or business) draw web applications (the example being google docs, as opposed to Microsoft office, which operates through a specific users computer). There is a front end (the user sees) and there is a back end (the collection of storage servers). These ends connect through a network (Internet).

[39] Andrew Wallenstein, "What Worries Netflix About Amazon Isn't Just Competition," 21 February 2011, *paidContent.org: The Economics of Digital Media*, http://paidcontent.org/article/419-what-worries-netflix-about-amazon-isnt-just-competition/

[40] Carl Brooks, "Netflix Now the Largest Commercial Operation in the Cloud." *Cloud Computing Information, News and Tips - SearchCloudComputing.com*. 19 October 2010 http://searchcloudcomputing.techtarget.com/news/1522167/Netflix-now-the-largest-commercial-operation-in-the-cloud

Infrastructure: Politics and Public Policy

In what she calls the "Big Squeeze," Susan Crawford[41] lays out three policy and political issues for media distribution; Netflix is either directly or indirectly involved in all of them. The first involves content acquisition: in large part because of Netflix's success in helping to create an increasingly highly valued market for digital distribution, the studios will charge aggregate video distributors like Netflix an exorbitant amount of money for the rights to stream their content, in an effort to price them out of the market. While Netflix has taken significant steps to remain competitive, the price of content has certainly risen. In October, 2008, a deal was made public that saw Netflix pay Starz an undisclosed sum of money for the digital rights to 2500 films from Disney and Sony that Starz had previously purchased for its own (failed) attempt at a streaming service.[42] The price Netflix paid Starz was estimated[43] at around $120 million over four years. In August of 2010, just two years later, Netflix signed $1 billion content agreement (over five years) with Epix[44] that allows Netflix to stream a collection of films and shows from the studio triad. As much as these rising prices have to do with the (perhaps somewhat inflated) growth predictions for Netflix in particular (the

[41]Crawford is a former assistant to President Obama in Science, Technology, and Innovation Policy. She is also a professor at the Cardoza School of Law in New York City.

[42] These deals are almost never made "in perpetuity"; instead, they are renegotiated every few years. One of the main reasons why the skepticism around the success of these models is so high, then, is that the content owners have caught on to the value of these deals, and will therefore try to negotiate much higher costs on the films when the previous agreement is reaching its time lapse.

[43] According to Andrew Wallenstein, "Why Netflix Won't Do a Tiered Deal With Starz," *paidContent.org: The Economics of Digital Content*, 3 March 2011, http://paidcontent.org/article/419-why-netflix-wont-do-a-tiered-deal-with-starz/

[44] Peter Kafka, "It's Official: Epix, Netflix Announce 'Multi-Year' Deal for Streaming Movies," 10 Aug 2010, http://mediamemo.allthingsd.com/20100810/its-official-epix-netflix-announce-multi-year-deal-for-streaming-movies/

assumption is that the content prices are not "one size fits all"), it also points to the uncertainty, as stated before, about the best way to value the digital form, and the difficulty both in attempting to quantify a "unit" of film in this regard, and in attempting to delineate where the film "begins and ends."

The second squeeze involves altering pricing models for consumers, who could face usage based pricing, and since a service like Netflix takes up a relatively large percentage of the allotted bandwidth, consumers would be charged more to access it, and might therefore opt out. As reported by Sandvine[45] in October of 2010, at "peak times" (8-10 PM) Netflix subscribers in the U.S. were driving about 20% of peak downstream last-mile Internet traffic. This is a potentially significant finding, whether it is "true" or not, because as both the Chris Dodd MPAA speech and the debates about the open-source video codex attest, those in control of content production and conveyance have an uncanny ability to appropriate these findings into a kind of language of "truth" which can have real, concrete consequences going forward. Will this finding, for example, result in congestion cost pricing (or differential treatment) for customers?

Alternative data plans are being explored by ISPs that resemble the fledgling (at least by comparison) mobile networks, which restrict data usage in some cases. The implications for the potential implementation of this kind of pricing plan might have severe consequences for distribution models, but also for ISPs, cable operators, and broadcasters as well. This cost might shift to the companies "responsible" for the congestion. For example, there have

[45] Sandvine's "mission," in its own words: "Enabling rapid service creation for the world's largest fixed and mobile operators through standards-based network policy control, Sandvine is focused on protecting and improving the quality of experience on the Internet. Our award winning network equipment and solutions help cable, DSL, FTTx, fixed wireless and mobile operators better serve the subscribers and understand network trends; offer new services; mitigate malicious traffic; manage network congestion; and deliver QoS-prioritized multimedia services."
Taken from "Fall 2010 Global Internet Phenomena Report,"
http://www.sandvine.com/downloads/documents/2010%20Global%20Internet%20Phenomena%20Report.pdf

been debates recently about whether or not Netflix should have to pay a tax into the Universal Service Fund, which was set up by the FCC originally to help finance phone use in rural areas (where for a number of reasons the cost of transmission is much higher).[46] The FCC is trying to transition into doing the same for broadband service, as a part of the National Broadband Plan.[47]

The third squeeze engages the willingness of ISPs to share pipe access to their respective customers; in other words, the third squeeze is directly related to net neutrality. This compliance is being tested in a litigation battle between Comcast and the host of Netflix's streaming service, Level 3 Communications. Comcast claims that Netflix's popularity is creating undue traffic from Level 3 within Comcast's pipes, and is therefore attempting to charge Level 3 more money to gain the coveted access to its customers, despite given their peering agreement as ISPs, which means that they share the pipes, funneling traffic back and forth to each other's customers. The legitimacy of this claim has been called into question, especially on the heels of the completion and FCC approval of Comcast's merger with NBC Universal (which was finalized several months after the initial conflict with Level 3 arose, but had been in the works since Spring of 2009). Hastings himself addresses this problem in Netflix's most recent end of year shareholder letter:

> Delivering Internet video in scale creates costs for both Netflix and for ISPs. We think the cost sharing between Internet video suppliers and ISPs should be that we have to haul the bits to the various regional front-doors that the ISPs operate, and that they then carry the bits the last mile to the consumer who has requested them, with each side paying its own costs. This open, regional, no charges, interchange model is something for which we are advocating.

[46] See, for example, Andrew Wallenstein, "Hogging Bandwidth Could Crack Netflix's Piggy Bank." *The Economics of Digital Content*, 24 Feb. 2011, http://paidcontent.org/article/419-netflix-faces-new-cost-pressure/.

[47] See "Connecting America: The National Broadband Plan." www.broadband.gov

This is part and parcel of the larger ongoing debates about net neutrality. At stake in these debates is the transformation of the "public Internet" into a "private network." On the other hand, the recent FCC push to reclaim and repackage the existing spectrum allocations has caused people like Gordon Smith—a former Republican senator from Oregon and now the President and CEO of the National Association of Broadcasters—to argue just the opposite.[48] The claim is that the FCC is overstepping its boundaries by trying to force companies to give up their share of the spectrum; this sort of interference is detrimental to private industries. This is one key infrastructural issue (among others) currently being debated by policymakers, with important (but as yet undefined) implications for future directions of media distribution.[49] If, for example, the spectrum is indeed being utilized inefficiently, a reallocation could possibly explode Comcast's argument about the "capacity of the pipes." Opening these bands up for public use could create incentives for investment in various video encoding options—like, for instance, Google's contested VP8—that would decrease the pressure on the pipes, yet still maintain serviceable quality.

[48] See, for example, John Eggerton, "Gordon Smith On Spectrum Reclamation: We Won't Be Rolled," *Broadcasting & Cable: The Business of Television*. 3 March, 2011, http://www.broadcastingcable.com/article/464732-Gordon_Smith_on_Spectrum_Reclamation_We_Won_t_Be_Rolled.php?rssid=20065

[49] In December 2010 the FCC released a new report on net neutrality, in which they "mandate transparency" and the maintenance of "openness" in three main Internet "activities": "providing broadband Internet access service; providing content, applications, services, and devices accessed over or connected to broadband Internet access service ("edge" products and services); and subscribing to a broadband Internet access service that allows access to edge products and services."
See FCC "Report on Network Neutrality," http://www.fcc.gov/Daily_Releases/Daily_Business/2010/db1223/FCC-10-201A1.pdf

Conclusions

This project has attempted to bring into alignment the variegated and often convoluted relations amongst those vying for control of the emerging economies of media distribution. Using a specific "case study" like Netflix keeps these relations grounded in their concrete actualizations while also attending to the way that these relations play out in the abstract space of the popular, the political, the legal, and the technological imaginaries, as was shown, for instance, in the way that Comcast argues for the right to defend the capacity of its share of the pipes from being overloaded. Further confusing and complicating matters is the spatial and temporal deference imbued within the technology itself: the fact that Netflix the technology (or, the user experience of Netflix, as separate from Netflix the business) is in fact an illusory skeleton upon which the user grafts the recommendations, the reviews, the queue, the mobility (by, for example, being able to stream from Apple's iPad). Netflix has embraced the ethos of the network from the standpoint of user experience—the Netflix Prize, the user recommendations and reviews, the queue—and also from the corporate side, with its collaborative competition with Amazon in the cloud, with Comcast in the pipes, with Washington both in terms of politics—the lobbying power of the studios to maintain control over DRM—and in terms of public policy. This argument plays out on both the physical reality of the quantifiably evident—that there is a finite amount of data traffic that the actual pipes can withstand—and mysticism of the technology itself, the fact that it is so difficult to figure out not only how to measure and differentiate this traffic, but how then

to accurately link the traffic to a cause and effect argument—like the line Hastings wrote to his shareholders about the situation, ". . . whether or not this is true . . ."

Complete resolution of these issues is beyond the scope of this project, and in fact any kind of "resolution" is a fantasy, as the relations and the static definitions of the distribution components seem to be infinitely mutable. Netflix, for example, has recently complicated its own status as solely a distributor by announcing a bid to produce its own original content, a big budget show with David Fincher and Kevin Spacey.[50] Even content itself, as discussed above, is a problematic category, as the hierarchical privilege of particular kinds of content—the big name, big budget, Hollywood movies—is preserved by Netflix, even as this privilege simultaneously disappears. In other words, Netflix's appeal is in its ability to allow streaming for some films in high demand (typically the Hollywood films with the most popular cache) but at the same time its ability to effectively mix these titles with other independent and foreign titles, which are separated not based on that kind of hierarchical divide, but instead by genre, or preferential attribute (like "Witty Biographical Showbiz Movies" or "Visually Striking Dark Dramas"). This ability is also one of the ways that both scholarly descriptive and technological confusion creep into these debates, because while for the independent titles—a la *Think Outside the Box* Office—Netflix is a way to level the playing field so that they might be seen and heard, those with vested interest in the Hollywood titles do not want their films to be lapse out of memory because their privileged status is not exploited with Netflix's interface. These debates are not solely about the content, as has been shown above; those who own content also at various points own and control access to the streaming infrastructure and to the technologies (cable, theaters, pay-per-view, broadcast) that both compete and collaborate. More work is needed here to expand

[50] See, "House of Cards," *The Netflix Blog*, 17 March 2011, http://blog.netflix.com/2011/03/house-of-cards.html

upon and further investigate precisely how these formations are ordered and prioritized, and many of the debates have yet to resolve themselves through the various legal, political, and market channels they move through. However, the importance of reconciling these relations—which involve some of our most integral cultural, political, legal, and infrastructural institutions—is beyond question.

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