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Property, Commons, and the First Amendment: Towards a Core Common Infrastructure

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Executive Summary

The Need for A Core Common Infrastructure

Over the past 150 years the cost of effective communications media has increased dramatically. As transportation improved and political units and social interdependence expanded geographically, the relevant political and cultural communities for most people expanded. Reaching these expanded communities was made possible through the introduction of mass media—first high-volume mechanical presses, then film, radio, and television. Throughout this period the high costs of the means of effective speech have increased the concentration of media, and largely focused its owners on serving the monetizable consumption habits of ever-larger audiences.

We stand today at the beginning of a technological revolution that could, in principle, reverse this long trend. Computer networks make possible a communications environment capable of fostering a wider variety of approaches to information production

and exchange. They can enable many more individuals and small groups to communicate effectively to their political and cultural community, using a wide range of models and responding to diverse incentives alongside those models of information and cultural production that became predominant in mass media.

This freedom for all users to participate in building our informational and cultural environment is the greatest promise of networked communications. It is a freedom tied directly to the core values of democracy and autonomy that underlie the American commitment to freedom of speech and a free press. To secure this freedom, however, we must build a core common infrastructure that will allow commercial and noncommercial, professional and amateur, commodified and noncommodified, mainstream and fringe to interact in an environment that allows all to flourish and is biased in favor of none.

The primary obstacle to the evolution of networked communications in the United States in this direction is the exclusive reliance that American communications and information policy makers have had in the past decade on private, proprietary provision of the elements of our common infrastructure. This policy of *exclusive* reliance on private provision of the public goods that make up our communications environment has been salient in all its layers. It begins with the very physical layer of the communications environment—the wires, cables, fibers and radio frequency spectrum, carries through to the logical layer—the software and standards that let expression be carried over the physical layer—and pervades the content layer as well. At each of these layers the United States has been making policy decisions that favor one way of producing and disseminating information at the expense of the many other ways that we can, and in many cases do, produce and exchange information, knowledge, and culture.

By a series of regulatory choices we are forcing the new communications and information environment to follow the pattern of the old, rather than experimenting with the more liberating possibilities of the new. Instead of an open environment where all can speak to all, and where the information environment is shaped from the bottom up, we are building an environment where large scale commercial entities that sell information and culture as packaged goods vertically integrate ownership of infrastructure, ownership of content inventories, and content production, shaping the way information in our society flows from the top down.

Building a robust communications environment that is not biased in favor of one type of speaker or one type of speech requires a core communications infrastructure that no one owns and that no one can control to impose a preferred model of discourse. To achieve this goal, we need a core common infrastructure equivalent to our public highway system—nonproprietary and equally open to all.

Just as public highways and sidewalks enable anyone to walk as and when they please, so too the core common infrastructure will be open to all. Having public highways does not eliminate commercial provision. Alongside highways we see railroads and airplanes providing private proprietary services with advantages and disadvantages relative to the open road. On the highways themselves, we see all kinds of uses, interrelated and coexisting. *Easy Rider* and *Thelma & Louise* use the same highway system that Ryder rent a truck and Federal Express do. So too, the common core infrastructure need not be built as a nature preserve for nonprofit users, but as a facility for all. The primary difference between the common infrastructure and the

proprietary infrastructure is that no one will have an exclusive right to capture and control the social benefits of its use.

Barriers to Emergence of a Core Common Infrastructure

The barriers to the development of a core common infrastructure are legal, intellectual, and organizational.

The legal barriers usually involve laws that affirmatively prohibit uses of important resources for the production and exchange of information and culture. Radio spectrum licensing, for example, prohibits the use of smart radios that can offer high bandwidth communications capability without anyone other than the radio owners owning "the network" in most portions of the spectrum. The Digital Millennium Copyright Act, to cite another example, severely curtails uses of information and cultural resources that traditional copyright law permitted. These legal barriers are erected in order to facilitate market-based production, but in doing so effectively prohibit the emergence of a core common infrastructure.

The intellectual barriers have to do with a deeply entrenched belief that markets based on strong property rights are the sole approach to attaining social productivity. This belief in *exclusive* reliance on markets, created in the economy of things, is exceptionally ill suited to instruct policy in the economy of information, culture, and communications. Public goods and positive externalities pervade these areas of economic life, where public provision and nonproprietary, noncommodifed private strategies are often essential to productivity. One need only look at university research and public libraries, public television, or the World Wide Web, to understand the

centrality of noncommodified approaches producing and exchanging information, culture, and knowledge. The capacity of many policy makers to comprehend the value of nonproprietary production in this area seems, however, to have atrophied in the last decade.

Finally, incumbent commercial owners of infrastructure and information resources are seeking to entrench and expand the advantage that their incumbency gives them in controlling the new information environment. Cable operators act rationally when they design their broadband systems to favor their own ISP and their own content, but their private rationality leads to public loss. Similarly, movie studios are privately rational when they seek to control all uses of their movies, but have recently been doing so at the expense of the ability of users in the general public to exercise those fair use rights that traditional copyright law secures to them in the interest of expressive freedom and economic efficiency. These incumbents continuously lobby in the political arena for greater control over all layers of the communications environment, and their political clout and financing makes their agenda carry the day more often than not.

Any effort to create and sustain a core common infrastructure must overcome these three barriers. First, one needs good academic studies of what is possible, and what is desirable, in terms of the creation of a core common infrastructure. Second, it is important to identify the legal barriers to implementing the core common infrastructure, and the organizational barriers to revising regulatory policy to make the core common infrastructure possible. Third, and finally, it will become necessary to develop a set of advocacy and litigation strategies to overcome the organizational entrenchment that is likely to seek to prevent the emergence of the core common infrastructure.

The First Amendment and the Core Common Infrastructure

The First Amendment plays two important roles in structuring the intellectual, legal, and organizational analysis of the relationships between the proprietary and the common domains of our communications environment.

First, as aspiration, the First Amendment focuses us on the importance of securing an open environment in which all can equally experiment with how to think and speak, and where no one can determine for anyone else what is orthodox. In this domain the First Amendment operates not as law, but as an expression of a fundamental commitment of the American polity to individual expressive autonomy and to robust democratic discourse in a widely distributed and diverse polity. Both democracy and individual expressive autonomy drive us to seek policies that will in fact deliver a robust, open environment where all have an opportunity to speak, and none can squelch the voice of another by the mere flick of a switch or by an unthinking exercise of the authority of law.

Second, judges applying the First Amendment as law, can review the regulation of information production and exchange—communication, to provide an institutional counterbalance to legislative or regulatory decisions that undermine the freedom of all to speak to all over a core common infrastructure. In particular, regulation of information production and exchange, even when it is motivated by a particular legislature's will to improve, rather than impede or censor, information flows, must be subject to careful review by judges. This is needed in order to add a layer of protection for freedom of speech and expression from the vicissitudes of the normal political economy. Aspects of the reform proposed here that are most amenable to direct, judicial intervention under the

First Amendment are the deregulation of smart radios and of the use of information and cultural materials.

This role must, however, be accompanied by a clear commitment to both the democracy and the individual liberty foci of the First Amendment. A law that prohibits an individual from expressing him or herself personally or politically so as to increase the speech capacity of a commercial mass media outlet is not equal in the eyes of the First Amendment to a law that requires a large commercial mass media company to make available resources—like cable channel capacity—to a non-commercial political group. Individuals, alone or in association, are the constituents of our democracy, and real human beings, not corporate entities, are the bearers of the moral claims of autonomy to freedom of expression. Conversely, the First Amendment claims of corporate entities are instrumental and derivative of society's interests in democracy and a free flow of information and culture. Their force is checked by the actual instrumental judgment of whether a rule that regulates them will in fact enhance, rather than retard, discourse and individual expressive freedom.

Operative Agenda

A non-proprietary core common infrastructure can be built using two mutually reinforcing, but entirely independent, approaches.

The first approach is to permit the existence of a commons in resources necessary for information production and exchange. This can be done by deregulating radio frequency spectrum and the use of cultural and information resources. In practical terms, such deregulation would require

(a) a step back from spectrum licensing and auctioning, and permission for intelligent radios that can share spectrum with each other to operate in reliance on equipment-embedded sharing protocols, instead of in reliance on owner/ licensee decisions about who shall communicate, how, and with whom; and
(b) a rollback of many of the restrictive regulations on the use of information and cultural resources that have been imposed over the last quarter century under the banner of "intellectual property"
(c) Occasionally, where a commons is unattainable because of the economics of a carriage medium, it may be necessary to settle for a common carriage-like or antitrust regulation of infrastructure, where proprietary rights are being used to distort the capacity of users to select their own, best preferred information environment.

The second approach towards building a core common infrastructure is public provisioning of the most basic infrastructure. Just as municipalities provide sidewalks, roads, and sewers, so too it is important to revive an interest in designing the best possible approach towards public investment in the core infrastructure. This would require careful selection of the right level of pubic investment. At present, some municipalities are acting in ways that suggests that such public investment could entail deploying conduits and dark fiber (fiber without the electronics attached) cables in municipal streets or sewage systems. Such a public core infrastructure would allow individuals and groups, both market-based and otherwise, to connect to a publicly provided high capacity infrastructure that would be protected from government intervention by being declared formally a public forum open for all to use. Parallel investments, particularly in open source software efforts, should be made at the logical and content layers of the infrastructure. These would largely parallel traditional public investments in basic science and the arts, with proper attention to designing their institutional structure so as to avoid exertion of public power through funding decisions.

Developing a core common infrastructure is an important strategy in pursuit of the First Amendment goals of supporting the availability of information from diverse and

antagonistic sources, supporting robust public discourse in both small communities and large, and enabling individuals autonomously to learn about, and effectively express themselves in, their world. In detail, building such a common facility requires a myriad of operative changes in law and policy. In the immediate and intermediate future, it is imperative to engage and support research, design, and policy advocacy in the following areas.

Physical Layer

- Deregulation: allowing license-free operation for certain equipment
- Public Provisioning: A National Highway Act for a public fiber network

Logical Layer

- Deregulation
    - Digital Millennium Copyright Act
    - Uniform Computer Information Transactions Act
    - Adjusting the Design of More Traditional IP Rights
- Public Provisioning:
    - A New National Software Foundation to Support Open Source Software

Content Layer: Deregulation only

- UCITA
- The Sonny Bono Term Extension Act and "Limited Times"
- Rights in Raw Data
- Linking
- Trademark dilution
- Core implementation of Copyright Act

Background: A Moment of Possibility

The last decade of the twentieth century saw the emergence of a revolution in information production and exchange. After a decades-long process of technical and scientific advances, computer processors, software, and computer-network communications coalesced to a point of take-off. The sci-fi image of a society in which all are connected to all ubiquitously, mediated by computers at all levels of human activity has become nothing more than a matter of time, and not much time at that. The Internet, with its relatively low bandwidth connections to relatively fixed points of access provides us with a shadow of the future, giving a general sketch of what life in the very near future will likely look like.

In the late 1990s, much was made of the economic possibilities wrought by this transformation in our primary means of communications. E-commerce was the watchword, and American, and to a large extent European policy in this area was dominated by a focus on harnessing this new social-technological phenomenon to facilitate efficient market production. Despite a general sense that the technological changes spelled social change as well, the nature of this change was poorly specified, often rife with sensationalism and paranoia, and largely dissociated from the considerations of economic policy with regard to computer-network communications.

The most important social and political implication of the digitally networked environment is its potential impact on the organization of information production and exchange. Since the introduction of mechanized print in the first half of the 19th century, the cost of access to effective communications media has been high, and has increased. As transportation improved and political units and social interdependence expanded

geographically, the relevant political and cultural communities for most people expanded. Reaching these expanded communities was made possible through the introduction of mass media—first high-volume mechanical presses, then film, radio, and television. Throughout this period the high cost of the means of effective speech has made a small number of large media companies central to information and cultural discourse. These high entry costs, and the business imperative to spread mass media products to large audiences, focused the mass media on commercializable information and cultural products that serve the monetizable consumption habits of ever-larger audiences.

Our political system has adapted itself to respond to the mass-mediated environment. The Press, as a social institution, has come in many domains to replace the engaged polity, because the dispersal of the polity has made effective, unmediated engagement in social discourse impossible. Engaged politics have remained the domain of either geographically local issues or of increasingly specialized players at the seat of power—whether they be industry lobbyists or professional public interest advocates. Whether embraced or regretted, this model of political engagement was made more or less inevitable by the cost of communicating effectively among individuals who have a stake in how society is run.

The radical potential presented by computer networks is their potential to reverse the trend of increasing costs of effective communications and its attendant concentration and commodification of the capacity to communicate effectively as an active participant in social, political, and cultural discourse. The cost of connected personal computers is orders of magnitude lower than the cost of television broadcast stations, cable systems, or large-circulation presses. Low cost processors put at the fingertips of individuals

functionalities for information collection and manipulation that were available only to large corporations or governments only a decade ago. Low cost access to the global network gives these individuals a communicative reach available only to the largest of media conglomerates a mere few years ago.

Because of these changes, computer networks make possible a communications environment that could sustain a much wider variety of approaches to information production and exchange than could the mass mediated environment. Such networks can enable many more individuals and small groups to communicate effectively to their relevant political and cultural communities. They can sustain a wide range of models of organizing production that respond to a more diverse range of incentives alongside those models of information and cultural production that came to dominate the mass media.

It is this possibility of giving users the capacity to participate in building our common informational and cultural environment and the freedom to construct their personal information environment that is the greatest promise of networked communications. To secure these possibilities, this freedom, however, our core common infrastructure must be one that allows commercial and noncommercial, professional and amateur, commodified and noncommodified, mainstream and fringe to interact in an environment that allows all to flourish and is biased in favor of none.

The Challenge

The challenge of communications and information policy in the early 21st century's transition to the digitally networked environment is to avoid being locked in to

the mass media model advocated by the incumbent industrial providers who dominated that model.

Despite the potential represented by the digitally networked environment, the shape of information production and exchange is not technologically preordained. Nothing in this network *forces* it to depart from the mass media model. Home connections, local servers, routers, software, and service contracts can be designed largely to maintain the centralized model of information production that has emerged over the past century and a half. The power of computer networks could be funneled to create a 5000 channel multicast system on the basic model of industrial, mass media cultural production, with its stark separation between production and consumption and its relatively homogeneous producers, all of whom respond to demand expressed in a market for culture sold as commodity, rather than an Internet model that is neutral as among many and diverse producers and approaches to information and cultural production.

In order to secure the potential of the digitally networked environment to foster freedom to experiment with different ways of organizing and sustaining expression, our core communications infrastructure must be free of entry barriers to effective communication. These entry barriers—high costs, technical specifications that are friendlier to centralized providers than to those who join in from the periphery of the network, network biases towards content owned by providers—are beginning to emerge as Internet service providers seek ways to extend their service from commodity carriage of bits to higher value-added services. While these developments are perfectly rational from the perspective of the providers, they curtail the potential of the digitally networked

environment to be free for all to speak to all, each on their own terms and in their own way.

The primary obstacle to the evolution of networked communications in the United States towards a truly open communications environment is the exclusive reliance that American communications and information policy makers have had in the past decade on private, proprietary provision of the elements of our common infrastructure. This policy of *exclusive* reliance on private provision of the public goods that make up our communications environment has been salient in all its layers.

The policy begins with the very physical layer of the communications environment—the wires, cables, fibers and radio frequency spectrum. Beginning early in the 1990s, when the Clinton administration declared that the private sector should lead in building what was then called the National Information Infrastructure, and reaching its apex in the Telecommunications Act of 1996, policy and law regarding the physical infrastructure have focused on private provision through markets. A related shift to focusing on private provision in the radio frequency spectrum occurred in 1993, when Congress introduced spectrum auctions as the primary vehicle for making spectrum policy, deviating from auctioning—though not from private provisioning—only to make a large grant to commercial incumbent television broadcasters in the move to digital television.

Paralleling these moves, we have seen increasing solicitude to private, market-based provision of the logical layer of the infrastructure. Most explicitly, this was seen in the privatization of the Internet addressing and domain name system in the mid-1990s,

but is also seen in the expansive approach to patenting software and business methods, most aggressively on the Internet.

More explicitly and extensively, the content layer of the information environment has seen a dramatic enclosure of the public domain in favor of property rights aimed to facilitate commodified production. The term of copyright protection was extended.[1] Trademarks were protected under a new theory of protecting the value of a name to its "owner", rather than the traditional rationale of avoiding consumer confusion among competitors.[2] Patents were extended to cover business models, and software patents were granted quite freely.[3] Raw data was subject to property rights in the Europe, and a battle has been waged for half a decade to introduce property rights to raw data in the United States as well.[4]

Most importantly, new mechanisms intended to permit perfect control by those who market information and culture as commodities over their "goods" were introduced. The Digital Millennium Copyright Act of 1998 prohibits circumvention of technical schemes designed to protect copyright, and the making of utilities that allow individual users to circumvent such schemes. As a practical matter, this new law will give vendors of information and cultural commodities absolute power to control access to and use of their works, based on their own private incentives rather than on the public deal that copyright represents, with its limited term, delineated rights, and user privileges. The Uniform Computer Information Transactions Act, which has already been adopted in two states,

[1] Copyright Term Extension Act of 1998, Pub. L. No. 105-298, 112 Stat. 2827.
[2] The Antidilution Act of 1995, codified 15 U.S.C. § 1125(c).
[3] State Street Bank & Trust Co. v. Signature Financial Group, Inc., 149 F.3d 1368 (Fed. Cir. 1998), cert. died, 119 S. Ct. 851 (1999).

rounds out the legal agenda of the enclosure movement of the 1990s. It permits vendors to bind users to standard terms, including waiver of well-established user privileges under copyright law, by including these terms in a standard contract that the user must accept to use the digital materials.

The exclusive focus of policy on private commercial provisioning of all layers of the information environment has been implemented in a series of regulatory choices intended to foster and support private provisioning. These regulatory acts are attempting to funnel the new communications and information environment into the mold of the old, rather than experimenting with the more liberating possibilities of the new. Instead of an open environment where all can speak to all, and where the information environment is shaped from the bottom up, we are building an environment where large scale commercial entities that sell information and culture as packaged goods vertically integrate ownership of infrastructure, ownership of content inventories, and content production, shaping the way information in our society flows from the top down.

To make this rather general and abstract claim clearer and more concrete, consider the following examples.

Cable operators have begun to offer broadband Internet access. Their early behavior suggests an attempt to bias their infrastructure in favor of their relative advantage in integrating infrastructure with content inventory ownership and dissemination. For example, both major cable ISPs (Internet service providers) prohibit individual users from operating a server—from being speakers, as opposed to listeners—and both prohibit users from streaming video over the Internet. This strictly separates the role of producer

[4] Directive No. 96/9/EC on the legal protection of databases, 1996 O.J. (L 77) 20. In the U.S., a database

from consumer, along the lines of the mass media model, and prohibits, as a matter of contractual and engineering design, experimentation with different approaches to information production and exchange. It is easy to see why a cable company that owns large libraries of proprietary content would want to make sure that its consumers spend their time consuming its materials. It is less easy to see why a society would, as a matter of public policy, rely exclusively on such companies to build the infrastructure on which all its constituents must express themselves, if they are to express themselves effectively at all.

A second example is tied to commercial ISPs. ISPs in general have begun to try to differentiate themselves from each other by privileging some content for speedy network delivery at the expense of other content. This means that a file made available by CNN will be available to a user more rapidly and easily than the exact same file size served by the ACLU, the Cato Institute, or the local public library. This is achieved through, for example, the introduction of caching or quality of service mechanisms.[5] These mechanisms concentrate the decision about whose information will be easier to access in the hands of the ISP. They are measures entirely rational and justified from the perspective of a rational, self-interested ISP. But they come at the expense of the public good that harnesses all of our creative energies and expressive abilities to be available for us all to make our individual and common information environment. They represent a divergence between the private interests of the providers—which is to differentiate

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protection bill has been introduced in every Congress for the past few years, most recently controversy has been focused on 106 H.R. 354.

[5] For an overview of the technical and policy issues see The Policy Implications of End-to-End, conference at Stanford Law School, http://lawschool.stanford.edu/e2e/. A parallel effect occurs when commercial sites turn to a third party commercial mirror company, like Akamai, and pays to have its content mirrored in many places so that access by users is faster to material that pays for mirroring than to materials that cannot pay.

themselves and capture market share—and the public interests, or general welfare, concerned with the increasing returns to the availability of more information resources to more people.

The third example comes from the copyright industries, and operates to squelch diverse cultural discourse by giving these industries control over a crucial aspect of the logical layer of the communications environment in which their products are distributed. Imagine a ten-year-old girl doing her homework on the history of the Holocaust. She includes in her multimedia paper a clip from Steven Spielberg's film, *Schindler's List*, in which a little girl in red, the only color image on an otherwise black-and-white screen, walks through the pandemonium of a deportation. In her paper, the child superimposes her own face over that of the girl in the film. The paper is entitled "My Grandmother." Imagine a professor of critical film theory putting together a series of illustrations of sexist or racist stereotyping in Hollywood movies. Imagine a law professor who teaches media law, who offers a short snippet of "The Insider" to motivate discussion of the costs and benefits of commercial media. These and millions of other unsung acts of individual creativity that rely on common cultural materials are central to democracy and expressive freedom. They are what allow us all to speak to each other using not only plain text, but also a rich tapestry of the cultural materials within which we live as members of a community and a culture.

But these are creative acts that Hollywood does not see as a private benefit. They all fall under the rubric of "fair use" in copyright law, and Hollywood has no right to prohibit them, and no ability to charge for them. In order to gain this ability, however, Hollywood pressed Congress to pass the Digital Millennium Copyright Act (DMCA),

which prohibits anyone from breaking encryption that protects copyrighted materials, like movies on DVDs. The DMCA also prohibits anyone from making decryption utilities that could be used to decrypt copyrighted materials without permission. As a court recently found in upholding this law, "Congress elected to leave technologically unsophisticated persons who wish to make fair use of encrypted copyrighted works without the technical means of doing so."[6]

In passing the DMCA Congress chose to aid commercial, high-production value, concentrated cultural production *at the expense of* noncommercial production. The little girl might now write her paper without the creative spark of the snippet from *Schindler's List*. She cannot make the use that under copyright law she is privileged to make, and she is unlikely to pay a special licensing fee to use the snippet in her paper. If she is rich enough to do so, many will not. Neither will the film critic or the law professor. These are all culturally enriching uses that could have been made of film that will simply be lost to society, in order to capture the value of a small subset of them for the movie studios' bottom line.

The final example, purely at the content layer, is the Free Republic case.[7] There, the Washington Post and the Los Angeles Times persuaded a district court to prohibit a group of conservatives from cutting and pasting stories from the newspapers' site onto their own discussion forum, where they commented on the liberal biases of the media. The court assumed, in that case, that expressive value was on the side of the newspapers, and showed no appreciation of the value of the ability of users to take information about the world they live in, *and the form of expression* in which these social stories are told,

[6] Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 294, 324 (S.D.N.Y. 2000).
[7] Los Angeles Times v. Free Republic, 2000 U.S. Dist. LEXIS 5669.

and use it as grist for their own political expression mill. Again, the newspapers did what was rational for them. They could not capture the social benefits of having robust political discourse directly attached to their stories and commenting upon them. But they could appropriate the benefits of occasional online paid access to their archived materials. This led them, and the court that supported them, to impose a real burden on the noncommercial amateur forum for political partisan debate in order to secure a revenue stream that was unlikely to have substantial impact on their bottom lines. In this case, a strong sense of the centrality of the professional commercial producer relative to the amateur political discussant led to regulation that makes political discourse among participants—as opposed to transmission of the statements of commercial professionals to consumers—more expensive to undertake and harder to sustain.

The series of examples from the physical, logical, and content layers suggests how laws implemented at each layer can lead to reproduction of the mass media model in the digital environment. They also suggest that the mass media incumbents have the incentives and wherewithal to persuade legislatures and judges to shape the regulatory framework so as to tip the development of emerging communications in that direction. The challenge of communications and information policy in the early 21st century is, then, to avoid having the transition to the digitally networked environment locked in to the mass media model by the incumbent industrial providers who seek to leverage their position in old media into the new.

Operative Goals—Overview

A core common infrastructure

To sustain a robust communications environment that is not biased in favor of one type of speaker or one type of speech, a society needs a core communications infrastructure that no one can control to impose a preferred model of discourse. Given the incentives and opportunities of private owners of infrastructure and information resources to maintain control over elements of the digital environment that they own, the core common infrastructure must, in order to provide a neutral platform, be nonproprietary and equally open to all.

Just as public highways and sidewalks enable anyone to drive or walk as and when they please, so too the core common infrastructure must be open to all. And, just like public highways, this infrastructure will supplement and support private commercial provision, not undermine it. Alongside highways we see railroads and airplanes offering private proprietary services with advantages and disadvantages relative to the open road. On the highways themselves, we see all kinds of uses, interrelated and coexisting. *Easy Rider* and *Thelma & Louise* use the same highway system that Ryder rent a truck and Federal Express do.

So too, the common core infrastructure must not be built as a government monopoly, and need not be built as a nature preserve for nonprofit users, but as a facility for all. The primary difference between the nonproprietary common infrastructure and the proprietary infrastructures is that no one will have the legal right to capture and control the social benefits of its use. The two types of infrastructure will exist side by

side, each with its relative advantages, complementing each other as do highways and railroads, or national parks and private vacation resorts.

Operational goals

Non-proprietary infrastructure can be built using two mutually reinforcing, but entirely independent, approaches. The first approach is to remove the legal impediments to the emergence of sustainable commons in the resources necessary for information production and exchange. The second approach is to adopt public provisioning of these resources, stepping back from the bias towards exclusive reliance on private provisioning that typified the 1990s.

The first approach is to permit the existence of a commons in resources necessary for information production and exchange. It is an approach made possible by a particular set of technological developments in digital wireless communications and by the rather unique economic attributes of information and cultural products as economic goods. These technological and economic phenomena can be harnessed to creating a sustainable commons by deregulating radio frequency spectrum and deregulating the use of cultural and information resources. In practical terms, such deregulation would require

(a) a step back from spectrum licensing and auctioning, and permission for intelligent radios that can share spectrum with each other to operate in reliance on equipment-embedded sharing protocols, instead of reliance on owner/ licensee decisions about who shall communicate, how, and with whom; and
(b) a rollback of some of the regulations on the use of information and cultural resources that have been imposed over the last quarter century under the banner of "intellectual property"

Similar results may be attainable, and depending on circumstances desirable, even in cases where the economics of the carriage medium do not support a sustainable

commons, by imposition of a common carriage-like regime or antitrust regulation. The cable access requirements imposed by the Federal Trade Commission on AOL pending the AOL Time Warner merger,[8] and the interoperability requirements for AOL Instant Messenger, imposed by the Federal Communications Commission on the same merger, may be examples of such instances.[9]

The second approach towards building a core common infrastructure is public provisioning. Just as municipalities provide sidewalks, roads, and sewers, so too they could provide a core of fiber to which all users—commercial and noncommercial—will be invited to connect their switches. This would require careful selection of the right level of pubic investment. At present, the investments of some municipalities suggest that this might entail installing conduits and dark fiber along all municipal streets or through municipal sewage systems. If this is indeed a sufficiently stable element of the infrastructure, and if the cost is manageable, such a publicly provided infrastructure would attenuate the distorting effects of purely private provisioning.

A national fiber infrastructure funded and organized like the national highway system would allow individuals and groups, both market-based and otherwise, to connect to a publicly provided high capacity infrastructure. This infrastructure would be protected from government intervention by formally being declared a "public forum." Such a declaration would carry the constitutional implication that the infrastructure is

[8] The FTC required the merged AOL Time Warner to allow at least some competitors access to their cable broadband carriage facilities, so that these others could offer competing high-speed Internet access over cable.

[9] The FCC focused on AOL Instant Messenger (AIM), which is a platform for real-time communications among users who are online simultaneously. Competitors in the instant messaging market, like MSN Messenger and Yahoo, were being kept by AOL out of AOL's network of users by technical means, and the FCC required AOL to make its software work with the software of their competitors, so that users of Yahoo's messaging program could talk to users of AOL's. The concern was that, absent these

open for all to use, and is protected from government censorship or even lesser meddling by strict judicial scrutiny.

Running atop this national infrastructure, public investments are warranted in both the logical and content layers. At the logical layer, a recent report of the President's Information Technology Advisory Committee argued forcefully for a concerted national effort to support open source software development as an economic and strategic necessity. This recommendation must be studied, operationalized, and funded appropriately. Similarly, the twenty-year trend of looking upon public funding for information, scientific, and cultural production as something to be avoided to the extent possible should be changed. Public funding is responsible for the Internet. Public funding is largely responsible for the Human Genome Project. Public funding has supported a variety of diverse and controversial—challenging—cultural materials. It is important to study, explain, and design public funding for portions of the content layer of the information environment so as to complement the basic structural freedom that building the core common infrastructure is intended to give individuals and groups to become makers of their own information environment.

Before filling in more of the details of this operative agenda, however, it is important first to explain the normative and constitutional framework that forms the basis for its adoption.

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requirements, AIM's installed based would tip the market, AIM would become the sole instant messaging program, and that it could then be used as a platform for real-time delivery of content.

Why Pursue the Operative Agenda? Information Policy and the First Amendment

Building a core common infrastructure directly serves the central values that animate the First Amendment—the commitment to enabling and sustaining robust political and social discourse, and providing an open platform for individual expressive freedom.

First Amendment as Normative Guide

As aspiration, the First Amendment focuses us on the importance of securing an open environment in which all can equally experiment with how to think and speak, and where no one can determine for anyone else what is orthodox. Both democracy and individual expressive autonomy drive us to seek policies that will in fact deliver a robust, open environment where all have an opportunity to speak, and none can squelch the voice of another "by the mere flick of a switch".[10]

This view of the aspiration of the First Amendment is not uncontroversial. The opposition to it is expressed most clearly by Justice O'Connor in her dissents in the *Turner* litigation over the constitutionality of the cable must carry rules. There, Justice O'Connor explains that given the organization of cable infrastructure, someone will inevitably control it, and the question is whether it will be the cable operator, or an FCC rule. In response, she wrote: "[T]he First Amendment as we understand it today rests on the premise that it is government power, rather than private power, that is the main threat

[10] Turner Broad. Sys., Inc. v. FCC, 512 U.S. 622, 656-57 (1994)

to free expression."[11] This too was the view expressed by the majority of the court in *Tornillo*.[12]

Nonetheless, a long line of cases, beginning in *United States v. Associated Press*, through *Red Lion*, the *Turner* cases and the *Denver* case suggest a rejection of the notion that the First Amendment is concerned *solely* with government power. Rather, these cases suggest that the First Amendment, at least as a matter of aspiration, is concerned as well with the way that information is produced and controlled in society. Specifically, these cases state that it is a central concern that we attain "the widest possible dissemination of information *from diverse and antagonistic sources*."[13] In the *Turner* cases the majority specifically adopted this position over Justice O'Connor's quite eloquent claim to the contrary.

That the organization of information production and exchange raises issues germane to freedom of expression need not necessarily mean that the First Amendment requires any particular regulatory policy. Some have argued in the past that this view of the First Amendment embodies an affirmative right of access to the means of speech, judicially enforceable against a government agency that does not adopt policies that secure access to the means of effective communication.[14] The courts have not in fact adopted such a position. But the structural media regulation cases have quite clearly established that an understanding of the implications of communications and information

[11] Turner, 512 U.S., at 683-84.
[12] Miami Herald Publishing Co. v. Tornillo, 418 U.S. 241, 258 (1974).
[13] Associated Press v. United States, 326 U. S. 1, 20 (1945) (emphasis supplied); see also New York Times v. Sullivan, 376 US 254, 266 (1964); Red Lion Broad. Co. v. FCC, 395 U.S. 367 (1969); Citizen Publ'g Co. v. United States, 394 U.S. 131, 139-40 (1969); Buckley v. Valeo, 424 U.S. 1, 48-49 (1976); Turner Broad. Sys., Inc. v. FCC, 512 U.S. 622 (1994) ("*Turner I*"); Turner Broad. Sys., Inc. v. FCC, 520 U.S. 180 (1997) [("*Turner II*").
[14] Jerome A. Barron, Access to the Press--A New First Amendment Right, 80 Harv. L. Rev. 1641 (1967).

policy as concerning constitutionally embedded values serves as a strong guide for action by government agencies and legislatures.

The important thing to recognize is that the digitally networked environment has made possible better ways to serve the goals that have long been seen to justify structural media regulation. This environment could, in principle, be designed on a widely distributed model, where individuals and small groups can express themselves, exchange views, and create their own information environment with a reach and efficacy not possible since the rise of mass media. Actual diversity, built into the very architecture of the communications network that pervasively connects us all to each other can replace regulated mass media giants as the way we enhance the ability of all in society to speak creatively and effectively. Building that architecture correctly now, as it is emerging, will facilitate political discourse and individual expressive discourse without entailing the concerns about abusive government regulation that purports to facilitate these values but in fact supports a censorial or private interest.

First Amendment as Law

In addition to providing aspiration, judicially enforced First Amendment law provides a check on political excess. In particular, regulation of information production and exchange, even when it is motivated by a particular legislature's will to improve, rather than impede or censor, information flows, must be subject to careful review by judges. This is needed in order to add a layer of protection for freedom of speech and expression from the vicissitudes of the normal political economy.

Theoretical framework

One could map First Amendment doctrine and theory as largely falling on the following continuum. At one end is the position historically associated with Justice Black, in which the First Amendment serves as a trump—"no law" means "no law." This position has, in most contexts, largely been abandoned. Nonetheless, one sees occasional lapses into this type of First Amendment approach, in particular in the past decade where the property rights of media owners have been concerned.[15] At the other end of the continuum is an approach that might be thought of as "*Red Lion* on steroids". This is the position that the First Amendment creates personally enforceable rights of access to privately owned communications infrastructure, where the absence of such access rights, given the market structure of the media, makes effective communication to the relevant constituency impracticable. This approach briefly flourished after *Red Lion*, but was largely abandoned in the 1970s.

In between these two ends what has developed is a set of standards of justification for regulation that burdens speech. Labeled as levels of scrutiny, its substance is that some combination of the intent of a law and the extent of its effect on expressive freedom and social discourse will determine the probability that a law will pass muster under First Amendment judicial review. The more clearly it seems that the intent of the state actor whose action is taken was to suppress speech that actor disliked for its content, the less likely the action is to be upheld.[16]

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[15] Comcast Cable of Broward County., Inc. v. Broward County, 2000 U.S. Dist. LEXIS 16485.

[16] An exception to this general statement was Denver Area Educ. Television Consortium v. FCC, 518 U.S. 727, (1996), because the Justices there were confounded by the form of the plainly censorial rule—intended to suppress nonobscene sexually-explicit programming—which was to restructure a benign communications regulation—the access requirements of the Cable Act of 1992.

As the intent of the state actor moves away from any concern with the content of the speech, and speech is restricted only as a side-effect of regulation aimed at some non-speech concern, the probability that absent some very significant burden on speech the action will be upheld increases. Somewhere between the situation of censorial regulation and regulation aimed at something other than speech, there is a category of actions aimed directly at expression, but whose intent is not censorial. The clearest example of this type of law is media regulation—like the must carry rules upheld in *Turner* and the right of reply struck down in *Tornillo*. Here, the state actor has a benign intent—it seeks to enhance, rather than suppress, speech. Nonetheless, because the object of regulation is to design the flow of information, and the organization of its production and exchange, it requires close judicial review. This is so, as Chafee put it over half a century ago,[17] to assure both that the actual intent and effect are not a censorial wolf in sheep's clothing, and that the actor has not made a large error that burdens such an important aspect of our political and personal lives—discourse and expression.

In this category, there can be benign and malign forms of regulation. A malign form is one that seeks to suppress unwanted speech under the guise of structural regulation. This is the kind of regulation that the Court struck down vis-à-vis public access channels in *Denver*. Benign regulation is that which actually does seek to foster better discourse, or increase opportunities for expression. This type of regulation can be designed well or poorly. Whether designed poorly because of lack of sufficient care or, more commonly, as a reflection of the successful lobbying efforts of a party benefited by the regulation, judicial review serves as a second look. Regulations that, upon careful consideration by a court seem to be well designed to serve the goal of attaining a wide

[17] Zechariah Chafee, Government and Mass Communications 678-719 (1947).

distribution of information from diverse and antagonistic sources pass muster. Those that are not well designed in this respect, do not.

In this context, if *Tornillo* was rightly decided, it was not because it dealt with wood pulp covered with ink rather than electrons in a cathode ray tube. It was rightly decided because the right-of-reply statute it upheld was poorly designed. Since its trigger was controversial speech, and its remedy was a financial imposition that could be avoided by the newspaper owner by simply not printing controversial views, it would have squelched, rather than enhanced speech. *Red Lion*, to the extent it was wrong, was wrong for the reasons that the FCC cited when it abandoned the doctrine in 1985—the personal attack rules, like the *Tornillo* right of reply, were poorly designed to enhance, rather than suppress, critical expression. It was not wrong in its core underlying holding, for which it has consistently been cited by the Court in the cable cases—that benign information regulation is permissible if done properly.

This map of First Amendment law can be shown graphically as in Figure 1.

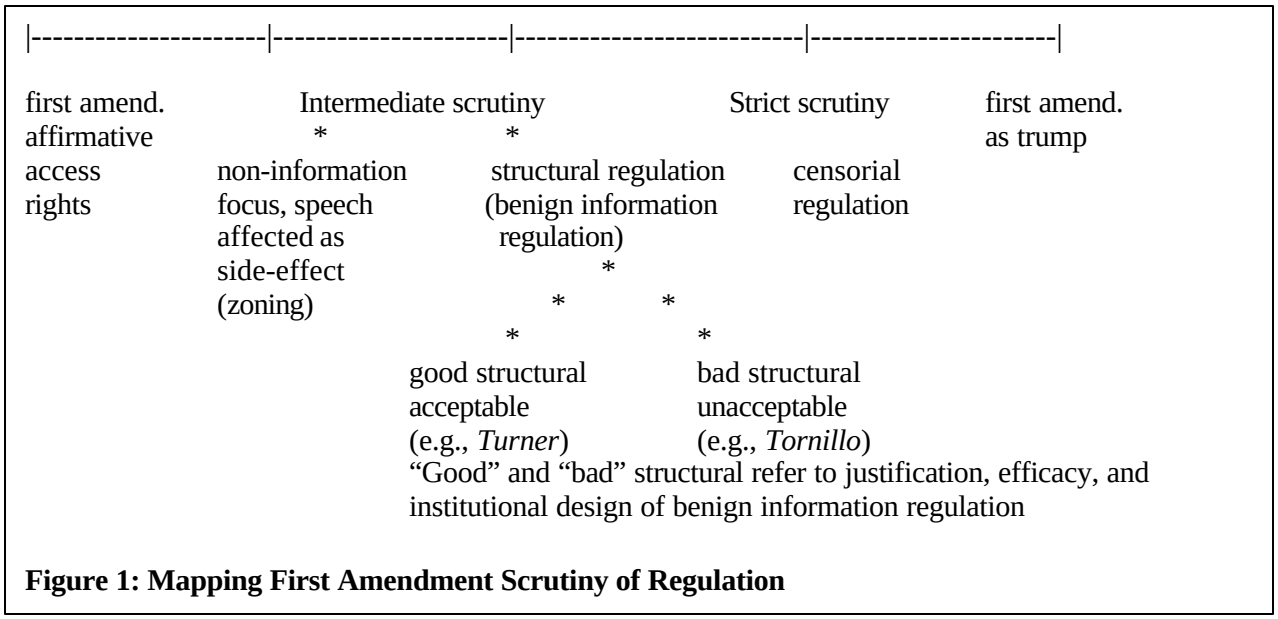

Figure 1: Mapping First Amendment Scrutiny of Regulation

In the context of contemporary information policy, the "bite" of this analysis is that it explains the role of the courts as a constitutional counterbalance to the political process in this area. It explains why the role that courts have taken in the context of media regulation ought to apply beyond this traditional area of application to other areas, most salient of which is overseeing the creation of exclusive private rights in information.

Application to development of the core common infrastructure

Copyright and neighboring regulatory schemes are a form of benign information regulation. They are aimed to, and properly designed probably do, enhance our discourse and expressive freedom. By giving authors rights to their intellectual products, copyright makes possible market-based expression that is free of the power of the state or of

today's versions of yesteryear's patrons.[18] These regulatory schemes function, however, by prohibiting many people—potential readers or users of the copyright owner's work—from reading without permission, and, more importantly, from incorporating what they experience culturally into their own contributions to social discourse. The design of copyright law is therefore of significant First Amendment concern, as the Supreme Court has acknowledged.[19]

Exclusive private rights in information have grown like kudzu in the past decade. This growth is driven by the immense economic returns to the small number of corporations that own large inventories of copyrighted materials, who seized on the increasing reliance of American wealth on information production and exchange, coupled with rapid technological transition, to persuade Congress and some states to endorse a dramatic enclosure of the public domain. These laws are all, functionally, a form of information regulation, and some of them, or at least some aspects of them, are poorly designed to enhance public discourse or individual expressive autonomy. This institutional overgrowth must be subject to constitutional challenge—some aspects already are being so challenged—and invalidated. Doing so would revitalize the public domain as an important component of the content layer of the core common infrastructure.

At the physical layer of the core common infrastructure, First Amendment litigation may be necessary to counter the force of incumbents in blocking the emergence

[18] Harper & Row, Publishers, Inc., v. Nation Enters., 471 U.S. 539, 558 (1985); Neil Netanel, Copyright and A Democratic Civil Society, 106 Yale L.J. 283 (1996).

[19] The Court refused to create a *special* First Amendment exception to copyright "[i]n view of the First Amendment protections already embodied in the Copyright Act's distinction between copyrightable expression and uncopyrightable facts and ideas, and the latitude for scholarship and comment traditionally afforded by fair use. . . ." *Harper & Row*, 471 U.S. at 560.

of the component of the core common infrastructure that can be built using license-free radios. Because licensing entails a prohibition, imposed on everyone, of transmitting in radio frequencies, which is selectively lifted for those who buy a license, the structure of the First Amendment challenge is quite plain. Any person who wishes to transmit using a smart radio that can be used without causing interference can bring an action against the prohibition of doing so. That prohibition must then be judicially scrutinized. Given the state of technology today and the availability of spread-spectrum devices capable of allowing everyone to share spectrum on an Internet model, rather than on the broadcast model, it is not at all clear that the prohibition on transmission that is the foundation of licensing remains constitutional.

The limits of judicial power over benign information policy

Experience in the 1990s suggests that judicial scrutiny of benign information regulation is a doubled edged sword. First Amendment claims have more commonly been used to retard, not foster, efforts aimed at enhancing the availability of information from "diverse and antagonistic sources" and the capacity of individuals effectively to express themselves. Thus, courts of appeal struck down the video dialtone regulations of the FCC, which required telephone companies that offered video programming to do so on a common carriage model, rather than as programmers.[20] More recently, a federal district court in Florida stuck down a requirement imposed by a local franchising authority on its cable franchisee, that if the cable operator offered broadband Internet

[20] Chesapeake & Potomac Tel. Co. v. United States, 42 F.3d 181 (4th Cir. 1994), vacated and remanded for consideration of mootness, 116 S. Ct. 1036 (1996); U.S. West, Inc. v. United States, 48 F.3d 1092 (9th Cir. 1995).

service, it also offer nondiscriminatory access to its network for competing services.[21] Similarly, the federal Court of Appeals for the D.C. Circuit struck down FCC rules that limit the overall share of the market that any single cable operator can capture and required operators to reserve a substantial portion of their channel capacity for unaffiliated programmers.[22]

All the regulations struck down in these cases were attempts—wise or unwise—to structure the infrastructure for the delivery of information so as to prevent any one company—the owner of infrastructure—from exercising too much control over the content of communications carried over the infrastructure. At their core, they sought to serve the values of a robust discourse and diversity of views, by preventing a situation where any one company occupied the position of deciding who gets to speak on a central medium of communication, and who does not. In each case, however, the challenged regulator failed to persuade the court that the structural or benign information regulation was sufficiently justified to pass constitutional muster.

These cases suggests that, absent refinement, introducing a general category of "benign information regulation" into the theory of First Amendment law may, or may not, result in more democratic and autonomy-enhancing information flows. The question then becomes whether there are principled distinctions to draw as to categories of benign information regulation cases, that would make the category's application more predictable. There are two important components to developing such a principled distinction. The first and more fundamental goes to the substance of what the First Amendment is about—individual autonomy and democratic discourse. The second is

[21] *Comcast Cable of Broward County., Inc. v. Broward County*, 2000 U.S. Dist. LEXIS 16485.
[22] Time Warner Entertainment Co. L.P. v. FCC, 94-1035, (March 2, 2001).

more institutional, and goes to the effect of the intended regulated parties on the political economy of legislation.

The core point to understand in refining the categories of benign information regulation for purposes of First Amendment review is that the normative claims individuals have to First Amendment rights are qualitatively different from the normative claims that artificial entities can make. Individual human beings are the constituents of our democracy, and only real human beings are the bearers of moral claims to autonomy. Artificial entities, like corporations, are neither. The claims of individuals to protection under the First Amendment are first order claims. When an individual asserts First Amendment claims to being protected in his or her expressive autonomy or capacity to participate in democratic discourse, that claim directly implements his or her claims to participation and expressive freedom that underlie the First Amendment. Recognizing these claims where appropriate serves the underlying principles of the First Amendment directly, not instrumentally. The First Amendment rights of artificial entities are second order claims—they are derivative and instrumental. Such bodies can claim First Amendment rights because, and to the extent that, giving them such rights instrumentally facilitates the freedom of expression of individuals or enriches democratic discourse.

The different nature of claims that individuals and artificial entities make under the First Amendment suggests an important division within the framework of benign information regulation. By definition, this form of regulation involves an instrumental attempt at institutional design that is thought to facilitate the same values that underlie the First Amendment.

When such instrumental regulation takes the form of a direct prohibition on individuals, courts are confronted with a direct constraint on a first order claim that implements an instrumental judgment that this first order claim will best be served in the long run by these prohibitions. This structure suggests a high degree of caution. It would require of judges a high degree of confidence in the government's claim that undermining direct first order claims to freedom of expression really will in the long term enhance the expressive freedom of the very individuals whose freedom is curtailed by the challenged law.

When benign information regulation is applied to artificial entities, the challenged law similarly represents a judgment about what, instrumentally, will best serve the expressive freedom and democratic participation of individuals. But its implementation does not raise first order, but only second order First Amendment concerns. First Amendment law as it has developed expresses a general judgment that refraining from regulating communication of any entity, including artificial entities, best serves the first order claims of individuals. It does so by facilitating the provision of information and platforms for discourse and by allowing individuals to band together in aid of their political and personal expression. This judgment is translated into the instrumental basis for First Amendment claims made by artificial entities.

The difference in the type of claims raised by individuals and artificial entities suggests a difference in the degree of care that courts must exercise in reviewing a challenged law.

When a regulation burdens the expressive autonomy of an individual, it directly undermines one of the two core claims undergirding the First Amendment. To justify

doing so requires very weighty and well substantiated reasons to believe that the instrumental effect of such a regulation will in fact redound to the benefit of the expressive autonomy of individuals, as well as to democratic discourse.

When a regulation limits what a business corporation can do with its assets, even if the regulation constrains how the corporation can use these assets to produce and convey expression, the law does not impinge on the expressive autonomy of anyone who has a claim to have such autonomy. The First Amendment introduces judicial review so as to secure the instrumental value of the corporation's use of its assets for the benefit of individual autonomy or for social discourse, not to secure the corporations direct claim—which is reserved for individuals or constituents. The regulation represents a particularized instrumental judgment as to the effects on individual expression and democratic discourse of a particular set of rules regarding how a corporation is free to use resources for information production and exchange that it owns. The First Amendment represents a generalized instrumental judgment that such particularized judgments, when made with regard to the allocation of control over resources for information production and exchange, may diminish, rather than aid, the very values they purport to serve. The degree of caution is based on experience with regulatory errors and regulatory masking of censorial intent, not on the concern that the instrumental goal is being achieved by impinging on first order claims under the First Amendment, as is the case with regulations whose burden falls on individuals. Laws that regulate artificial entities and involve competing instrumental judgments should therefore be reviewed more leniently, with a primary focus on whether they are censorial in purpose or effect, whereas

regulations whose prohibition falls on individuals ought to be subjected to more searching review.

Complementing this substantive reason to be more cautious about laws aimed at individuals than at laws aimed at artificial entities is an institutional reason. Corporate interests in communications and media markets are relatively well defined. There is either a small number of affected actors, all of whom are well represented and understand the implications of proposed legislation on their private interests, or there is a clearly defined industry association that monitors legislation. When regulation is proposed that would burden these actors, their interests are clear, and usually well represented in Congress. On the other hand, laws whose burden will likely fall on individuals have no similar systematic means of representing the interests of the burdened parties. Individuals who would bear the brunt of the law rarely know at the time of the regulation that they are so to be affected, and the burdens in general are diffuse and vague. It is only when these burdens eventually fall on a particular individual that the cost of the law becomes apparent, and it is precisely then that a court is most likely to be called upon to evaluate the law. The different political economy suggests a more active role for courts in reviewing legislation where the interests of those burdened by the law were less well represented, and hence the law is more likely to have settled on an inappropriate arrangement. As with the substantive concern, this would suggest that courts should be more restrictive in reviewing laws that burden individual expression even if they are purportedly benign in intent, and more permissive when the burden of such laws falls on corporations.

Ironically, the cases in the 1990s have done exactly the opposite. Laws whose proscriptions applied to corporations—like telephone companies or cable companies—were often struck down. Laws whose proscriptions applied to individuals—most importantly, copyright and trademark law—were routinely upheld in the face of First Amendment challenges.[23] To some extent, this may have to do with the misnomer—intellectual *property*—that is used to describe these forms of regulation. The term "property" appears to indicate some natural, pre-legal right, that law recognizes. Though this has never actually been the case with any property—including real property—in the common law, the idea that property "recognizes" natural claims rather than creates claims is intuitively appealing to many. But to some extent it is simply a failure to recognize that the only way in which rights in information, culture, and knowledge can be created and maintained is through a series of legal prohibitions on people from using the information, or culture, or knowledge. The legal form of exclusive private rights in information has developed into a prohibition, applied to all individuals other than the owner, on reading or speaking certain words without permission. When applied to individuals, this is a legal form that directly challenges first order claims of individuals to First Amendment protection.

An important effort for legal scholarship and advocacy then, is to develop an understanding of the First Amendment that would resolve the incongruity between the cases and what a commitment to the values underlying the First Amendment would require. In particular, it will be important to build the analytic framework that will explain how First Amendment law could be made more congruent with a constitutional

[23] A&M Records v. Napster, Inc. (9th Cir. 2001), Eldred v. Reno, (D.C. Cir. 2001); L.A. Times v. Free Republic, 2000 U.S. Dist. LEXIS 5669 (C.D. Cal. 2000); Universal City Studios v. Reimerdes, 111 F.

commitment to individual expressive autonomy and to democratic discourse in a political community that recognizes individuals as its constituents.

Barriers to Implementation

The primary barriers to the emergence of a free information environment running atop an open core common infrastructure are entrenched power and ossified assumptions about what is possible and desirable in information production and exchange.

Entrenched business models

A non-proprietary core common infrastructure threatens the business models of those companies that relied on the exclusivity of private commercial provisioning. While on its face the problem the core common infrastructure presents is of competition from a competitor that is insensitive to the bottom line, in fact something more fundamental is at stake. The main problem for private providers of physical infrastructure, like AOL-Time Warner or AT&T, is the introduction of meaningful choice of an infrastructure that is not biased in favor or one provider or another, but is truly free. The addition of a single alternative provider of commodified infrastructure or resources would weaken incumbents' market power, but not fundamentally alter the choice set of users. The addition of noncommodified, open infrastructure would destabilize the supposed inevitability of the incumbents' way of serving communications needs. A stark example of this effect comes from an old technology—low power FM radio.

Supp. 2d 294 (S.D.N.Y. 2000).

In early 2000 the Federal Communications Commission issued a Report and Order permitting the operation of low power FM radio transmitters.[24] There is nothing technologically new about these transmitters. They simply operate at a low power, and in frequencies and at geographical locations that assure that their signal will be too weak to interfere with established broadcasters.

The FCC's plan would have permitted locally based nonprofit organizations to receive a license to broadcast using low power radio. Unlike the full-power radio transmitters that incumbent broadcasters have, low power radio can reach only very short distances—up to three miles. Granting these low-power licenses was intended to enable communities to find their own authentic voice in the ether.

The FCC's technical staff conducted extensive studies about how many such radios could be allowed to operate, at what power, in what frequencies, and in which geographic places. A major reason that the FCC set the power so low, making the effective reach of these stations so local, was precisely to avoid interference—to make technically sure that the low power radio stations did not cause interference to existing full-power radio. The other reason was to make sure that these stations indeed serve as a medium for authentic local community discourse.

In a full administrative process the FCC received public comments and passed rules that were even more conservative than its technical staff thought necessary to protect incumbent broadcasters. As a result of the FCC's conservatism, community groups in large urban centers with many incumbent broadcasters would find it difficult, if

[24] Report & Order In the Matter of Creation of Low Power Radio Service, MM Docket No. 99-25, January 20, 2000.

not impossible, to operate. But it would have enabled over 1000 community organizations, churches, and schools to create a new medium for local discourse.

Having won half their battle to block low power radio in the FCC, the incumbent broadcasters next persuaded Congress kill off the remaining threat of local broadcast freedom. Congress passed an appropriations rider that heaped such technical and regulatory obstacles in the way of low-power radio that its death is almost assured.[25] Under the new law, only rural communities will likely have low-power radio stations, and many of these communities may be too geographically dispersed to take advantage of them.

The specifics of low power radio are substantially less important for understanding the barriers to the emergence of the core common infrastructure than the economics of the broadcasters' opposition to it. The incumbents were not afraid of interference—the power levels set by the FCC were conservative, and the new licenses were to be granted subject to revocation if actual interference to an incumbent were to occur. The incumbents were afraid of competition. But their fear of competition was not that low power radio stations would compete for advertising dollars. Low power radio was required to be purely noncommercial.

Incumbents feared that if listeners have a choice, they might prefer local community programming to what the incumbents have to offer. This fear cut across the commercial/public divide among incumbents, and National Public Radio served as the incumbents' poster boy in the fight to silence low power radio. All of the incumbents

[25] Enacted 106 P.L. 553, §1(a), incorporating by reference 106 H.R. 5548 §632.

design their programming to capture wide audiences by serving a relatively low common denominator of a large audience with widely diverging interests. They need to do so in order to capture enough eardrums to justify the expense required to sustain mass-media style programming. Even public radio must capture a large audience so as to generate a large enough listener base to solicit donations. Low power radio would have offered a fundamentally different model, with extremely low entry barriers, and was therefore likely to offer a platform for speaking, as well as listening. To respond to such a new capability required far too fundamental a change in the way broadcasters work to be permitted.

AOL-Time Warner is likely to take no more kindly to a high-speed data carriage infrastructure like the core common infrastructure. As long as the universe of competition is between AOL-Time Warner and AT&T, for example, the competition continues to be over who will better integrate its physical, logical, and content layers to capture the greater number of eyeballs for the most time. The introduction of competition from infrastructure in which no one controls the architecture offers a more fundamental challenge to the incumbents' business model.

The resistance of incumbents is even more focused with regard to the use of cultural and informational resources. The incumbent copyright industries, in particular the movie industry and the recording industry, have built their business models on the assumption that they will continue to be able to control access to their works, indeed, that they will be able to use encryption and networked communications to perfect this control. To do so, however, requires ever-increasing intrusion into the very architecture of the networked environment. It requires technological protections, and regulation of the

equipment to be deployed. It requires that the design of video recorders be changed. It requires that the design of computer hard drives be bent. It requires that DVD drives all be licensed.

The extent to which sustaining the business model of the copyright industries requires controlling both the computing and communications facilities and the cultural habits of users is breathtaking. Yet in the Digital Millennium Copyright Act Congress implemented the legal element of developing a hermetically sealed pipeline from the studio door to the eyeball of the consumer. And through a series of industry standards-setting processes Hollywood is gradually pushing forward its agenda to alter the fundamental design of the digitally networked environment into a leak-proof pipe.

Porosity, however, has been a core design feature of copyright since its inception. "From the infancy of copyright protection, some opportunity for fair use of copyrighted materials has been thought necessary to fulfill copyright's very purpose, 'to promote the Progress of Science and useful Arts . . . .'"[26], as does securing access to other components of the public domain, like facts and ideas.[27] "Fair use is not a grudgingly tolerated exception to the copyright owner's rights of private property, but a fundamental policy of the copyright law."[28]

Designing the network to facilitate the industrial, mass media model of cultural production will create an ecology hostile to individual creativity and to models of organizing production that are voluntaristic or civic, rather than commodified. As the public domain is enclosed in ever-tighter fences, and as industrial producers of cultural

[26] Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 575 (1994).
[27] *Id*., at note 5.

goods exercise tighter control over the context and conditions under which anyone may access culture to make it their own, it becomes more expensive, and often simply impossible, for individual and communities to take from the general culture and remake portions of it in their own image.

That the entrenched incumbents will oppose the development of a core common infrastructure is not to be doubted. An open information environment will therefore only emerge if their opposition can be countered with advocacy in legislatures and with constitutional litigation where necessary to overturn or narrow their legislative victories—like the Digital Millennium Copyright Act or the appropriations rider that squelched low power FM.

Ossified Assumptions

The second half of the twentieth century saw a move, by fits and starts, from quite heavy reliance in matters of public policy on command and control schemes, to heavy reliance on market-based mechanisms. In the United States and globally this trend received a boost after the collapse of the Soviet Empire, which seemed to prove the superiority of markets to hierarchical organization. As the United States came to formulate its public policies regarding communications infrastructure and the transition of copyright law into the era of digital media, reliance on market-based private provisioning occupied the entire field of public vision.

[28] Pierre N. Leval, 103 Harv. L. Rev. 1105, 1135 (1990).

Physical infrastructure was to be built by private firms, not, like the highway system and the Internet until the early 1990s, by public investment. Components of the logical infrastructure that had been publicly provided, like the domain name system, were privatized. And information and cultural resources were subject to a dramatic increase in regulation, intended to enclose these resources with tighter property rights.

There are two primary conceptual problems with this trend. First, it assumes a two-dimensional institutional space. It thinks of the universe of institutional arrangements as plotted on a range from markets to state-hierarchical management. This assumption is wrong. It misses the ubiquity and importance of commons—resource spaces available for all to utilize with neither market-clearance nor hierarchical management. Although commons—highways and sidewalks, ideas and facts, cashier lanes at supermarkets—are ubiquitous, they generally go unnoticed. Commons are a thoroughly understudied type of institutional arrangement.

Blindness to the commons is particularly galling in the context of communications and information policy, because in these areas commons have been of immense importance. The centrality of unimpeded access to information resources in the public domain has been a cornerstone of copyright law in the United States since its inception. Communications systems share many of the attributes of transportation systems, and transportation systems have included the most persistent and visible commons—in both roads and waterways—of any physical goods.[29] The high variability in value of using both transportation and communications facilities from person to person

[29] Carol Rose, The Comedy of the Commons: Custom, Commerce, and Inherently Public Property, 53 U. Chi. L. Rev. 711 (1986).

and time to time have made a commons-based approach to providing the core facilities immensely valuable. Nonetheless, an intellectual blindness to these commons has left current U.S. policy impoverished in its imagination of how the communications infrastructure can best be built to enhance both productivity in the information economy and freedom in the information society.

The second conceptual problem with the trend towards exclusive reliance on market mechanisms is that it fails to see the significance of the public goods attributes of information and communications systems, and the pervasiveness of positive externalities in this area. Information is a public good in the strict economic sense. It cannot, consistent with current economic theory, best be provided solely in reliance on market-based, commodified production.[30] Communications systems have high positive externalities, most notably network effects, that cannot fully be captured by private providers. The social value of such networks, particularly when they are opened, often diverges from the private value, and sometimes private value can be enhanced by designing a system so as to enhance uses that can be captured, even where this design excludes many valuable uses that could not be captured by the private party. The asymmetric design of cable broadband networks to make them better able to send materials to the home than from it, and the prohibition on streaming video on these systems, are examples.

Public goods must, at least in some measure, be provided publicly, if they are to be provided efficiently. No one would think of privatizing national defense or civilian

[30] This has been understood by economists at least since Kenneth J. Arrow, Economic Welfare and the Allocation of Resources for Invention, in The Rate and Direction of Inventive Activity: Economic and Social Factors 609 (National Bureau of Economic Research, 1962).

security, though we allow a market in private security agents to exist. Nor would one think that purely private transportation should supplant our current mixed approach of private and public infrastructures.

Our overly-heavy reliance on private provisioning through markets was born in an economy whose central resources were coal, oil, wheat, steel, etc. These are all classic economic goods, and private provision through markets has in fact proven to be, largely, the most efficient way of producing them. Translating the lessons we learned from that economy to one in which the primary goods are either public goods in the strict economic sense or goods with high positive externalities that cannot be captured by private providers is difficult. The overly simplistic translation that results in adoption of exclusive reliance on market-based, property-based production is a mistake, and a mistake that poses a serious obstacle to developing better policy. Reversing this trend requires extensive academic research into the elements of the difference between the information economy and its predecessors, and the ways in which commons and public provisioning can improve effectiveness, while enhancing freedom as well. It will also require significant work in translating this academic work into a form and a framework that is appropriate for political debate and practical implementation.

Operative Agenda: Elements

Physical Layer

Deregulation: allowing license-free operation for certain equipment

Until the last decade, the universe of options for regulating spectrum was technologically limited. Given the relative crudeness of reception devices that could be made cheaply enough for consumer markets, the only way for a signal from a transmitter to be received by a receiver was for the transmitter to be louder than all other sources of electromagnetic radiation in a given frequency. This meant that if two or more transmitters tried to be heard over that frequency, there would be "interference"—neither would be sufficiently louder than the other to be heard. This basic technological fact limited the menu of institutional options open for government in regulating wireless transmission. *Someone* had to be given the exclusive right to transmit loudly over a given narrow frequency, at a given time, in a given location and power. The policy debates for almost half a century have focused on whether that someone should be chosen by licensing or by auctioning, and to what extent the use to which they put their license should be determined by the Federal Communications Commission and to what extent it should be determined by licensees through market transactions.

Advances in computer processing, network communications, and wireless transmission technologies generally described as spread spectrum techniques have now made possible a third alternative. Receivers and transmitters can be made intelligent enough to share spectrum. For example, a transmitter can send a very "quiet" or low power signal that includes both its content and an identifying code. Receivers can scan very wide swaths of frequencies, find transmissions that carry the code they are listening

for, collect these transmissions and reproduce them at the receiver. Intelligence or processing power at the receiver replaces raw transmission power at the transmitter to eliminate interference.

These technological advances make possible an infrastructure of first and last resort that is owned by no one and controlled by no one. This does not mean that spectrum scarcity—in the economic sense—has disappeared. It means that for many uses the most effective mechanism for utilizing spectrum and for allocating it to the extent scarcity cannot be eliminated by economizing through technology, is equipment-embedded sharing, not organizational decision by a licensee or an owner of a frequency. Equipment currently in existence from a variety of companies, small and large—including Nokia and Apple, for example—puts all the communications and networking intelligence in end-user equipment. In principle, it is possible that every home will have a broadband radio of this new variety, which will be that home's initial broadband Internet connection. Each of these radios would automatically locate other similar radios in the neighborhood. When the user was searching for information, or transmitting email or streaming video, the radio would operate to transmit to the network. When it was not, it would signal the other radios that it is available to relay the signals of others. The last few hundred yards and up to fifteen miles to the home would be deployed by end users, with their own equipment. The closest analogy would be if cars and feet were to lay their own roads and sidewalks.

It is important to understand that this is not a pipe dream or a "Jetsons" scenario. Apple offers as standard equipment the capability to create a wide area network—say, on a university campus—that connects at speeds several times those of a standard T-1

connection. Nokia is poised to offer equipment capable of creating a spontaneous network that can deliver data at speeds of up to three times faster than cable modems currently offer, and seven times the speed currently used as the benchmark for high-speed access—a T-1 line. Once the equipment is deployed the user is connected with a high bandwidth connection for the life of the equipment.

The primary factor limiting the efficacy, speed, and cost of this equipment is the fact that it is prohibited from using most of the spectrum. The achievements that have been made to date have used scraps of spectrum initially set aside for garage openers and microwave ovens. The FCC has viewed license-free operation as a sideshow. The practical policy implication of a commitment to building a license-free wireless infrastructure as the physical layer of the core common infrastructure requires a change in this policy.

The core policy objective that the technological emergence of spread spectrum techniques requires is to make license-free operation central, rather than peripheral, to spectrum policy. Equipment that enables users to build their own networks, at high speed, and which no one but the end-users who own the equipment controls, offers the best opportunity for building a physical infrastructure that no one owns, and that no one can control. This would permit the emergence of one element in the physical layer of the communications environment, alongside the cable and telephone infrastructures, where all the incentives for use and deployment are focused on giving end-users the greatest flexibility and control over how the network will be used. This, in turn, makes possible—though does not force—a network infrastructure that, like the Internet in the 1990s and unlike the directions broadband cable is taking today, is neutral as among

commercial and noncommercial, commodified and noncommodified, or amateur and professional uses.

License-free operation must, then, be brought to the center. This might mean that certain types of devices, known as ultrawideband radios, would be allowed to operate *anywhere* in the spectrum, as long as they do not actually and demonstrably interfere with incumbent services. It might mean that the 300MHz of spectrum currently used for UHF television transmissions would not be auctioned when returned by the HDTV licensees, as is currently planned, but will be opened up for license-free operation as a protected service. It might mean that the current 300MHz where license free operation is permitted in the U-NII band will be made more hospitable to license-free uses by moving from it incumbent services, or it could be any combination of the above or other polices. The core change in FCC policy needs to be a focus on how to maximize the efficacy of license free operation, not, as it has been in the past, how to allow these playthings to exist on the margins of the incumbent services.

Public Provisioning: A National Highway Act for Communications

An alternative and complementary source of the physical layer of the core common infrastructure is publicly provisioned high-bandwidth communications. Just as municipalities, states, and the federal government collaborate to finance and maintain sidewalks, roads, and highways, so too can these levels of government cooperate to set up a fiber network. This network would be open for all to use—commercial and noncommercial users alike—but would not be designed to favor any one type of content or provider.

In the beginning of the 1990s, the United States made a decision to focus building of its core communications infrastructure in private hands. At the time, fiber optic networks were thought too expensive to deploy at public expense, and the general ideology of market-based provision obscured the benefits—both economic and social—that could emerge from a publicly deployed network. As we enter the 21st century, the economics appear to have changed, and the implications of exclusive reliance on private provisioning have also become clear. The fundamental and stable elements of fiber optic networks—conduits and dark fiber (*i.e.*, fiber without the electronics attached, leaving to various service providers to attach whatever becomes the state of the art later on)—have become substantially cheaper than they were ten years ago. New techniques of pulling fiber through sewage lines, for example, open new avenues for re-utilizing existing municipal infrastructure to create high-capacity public communications networks.[31] At the same time, we are seeing how private providers are driven towards shaping the service in favor of their own information, and building networks that are less friendly to noncommodified, amateur and civic uses than to commercial and commodified uses.

Just as publicly-provisioned and owned highways followed and complemented privately-provisioned and owned railroads, so too can publicly provisioned high-capacity optic fiber networks. A number of states and municipalities are already engaged in more or less extensive deployment of publicly provided network capacity, precisely along the rationale of the equivalence between communications networks and roadways. Chicago, for example, is in the process of building a project it calls CivicNet. The city issued an RFP to use its own communications needs to anchor a new high-speed communications

[31] A company called CityNet, for example, uses robots to pull conduits and dark fiber through sewage lines, and is in the process of utilizing these techniques to create city-wide networks in a number of U.S. cities,

infrastructure for the city. If the city specifies its needs correctly, most importantly for symmetric data carriage that does not treat most users as passive receivers rather than as active participants,[32] the network could form an important element of the core common infrastructure. Minnesota is in the process of developing a project called "Minnesota Connect," using state rights of way to lay fiber optic networks throughout the state.[33] Maryland is investing in building a statewide backbone. In Gainsville, Florida and Tacoma, Washington, the municipal power companies were the medium by which a municipal data network was built. In other places, municipalities simply followed the logic of public utility provision, in some cases facing resistance from telephone and cable companies fearing competition.

There may be many approaches towards public provision, and a variety of mixed public/private models. Present experiences point the general direction, and no systematic academic work has been done to define the range of preferred or optimal practices in this area. But the point is that a publicly provided high-capacity network can credibly commit to being open and neutral as among competitors and users, in a way that a private commercial entity cannot. Commercial services that might compete with AOL or Time-Warner cable simply cannot gain the same security to invest in these competing services if the primary bandwidth connection is an AOL Time Warner broadband cable service, as they could if they had access to a publicly-provided open access infrastructure. Individuals and small groups would be able to treat this network as a public forum, where

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the first of which is Albuquerque, New Mexico.

[32] In other words, that the network does not treat some nodes as "providers" who get the ability to pump a lot of information into the network, and "consumers" who have the opportunity to pull information from the network, but little capacity to send information into the network. This asymmetric design is legion in the proprietary broadband infrastructure, regardless of whether it is provided by the telephone companies and the cable companies.

[33] http://www.dot.state.mn.us/connect/

low cost of usage and absence of a bias in network design in favor of commercial and commodified use would put them on an equal footing with commercial services. Formally declaring the public network to be a public forum in the constitutional, First Amendment sense would largely eliminate concerns with government regulation that are additional to the concerns one would have for communications over a privately-owned network.

Logical Layer

Deregulation:

Digital Millennium Copyright Act

Imagine a critic of Hollywood culture—say, a feminist film critic or a fundamentalist preacher—preparing a presentation about the ills he or she sees in this culture. The most effective means of explaining and communicating this criticism would be a presentation laced with illustrations from actual films. The Copyright Act itself generally permits such quotations from video. The Digital Millennium Copyright Act (DMCA), however, has created a framework that operates at the logical, or software layer, that in effect prohibits these quotations.

The DMCA prohibits anyone from circumventing a technical measure that controls access to a work. It also prohibits anyone from making or distributing utilities that would help users circumvent protection measures. Neither provision, at least as currently interpreted, is subject to the fair use exception, and the quotations by the feminist critic or the fundamentalist preacher would not likely fall under any exception to the DMCA. If producers of cultural products encrypt them, as the film industry has done

with DVDs and new videocassettes, it becomes illegal under the DMCA to perform the functions at the logical layer that are necessary to quote from them.[34]

While some technical protection may be necessary to preserve the viability of a commodified, copyright-based business model in cultural production, the effects of a pervasive re-building of the logical layer of our infrastructure to control the way individuals interact with the cultural environment they occupy undermines both individual expressive freedom and the richness of political discourse. In particular, these provisions make cultural resources less available and more expensive for the noncommodified sector—like the feminist film critic or the fundamentalist preacher—threatening to impoverish a tremendously important dimension of social discourse.

The logical layer is an integral part of the core common infrastructure. Just as the physical must be sufficiently free to permit multiple, competing and complementary approaches to information production and exchange, so too must the logical layer. In this case, the DMCA must be overturned, either by courts under a First Amendment rationale or by Congress as a result of a successful campaign. Only a substantially weaker version, that leaves ample room for individual freedom of expression in a pervasively digitized cultural environment, might be appropriate to serve the needs of those producers of cultural material that rely heavily on sale of culture as a commodity.

Uniform Computer Information Transactions Act

The Uniform Computer Information Transactions Act (UCITA) is a model uniform law that has been adopted in Virginia and Maryland, and is under consideration in a number of additional states. Its most controversial feature is that it includes a provision

[34] Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 294, 324 (S.D.N.Y. 2000).

that validates mass market shrinkwrap licenses—licenses that appear within the product, and which purport to bind the user as having agreed to them by using the product. This provision of the UCITA is intended to settle the question of whether these are contracts that are against state contract-law public policy, or otherwise unenforceable because of lack of consent or because they should be treated as contracts of adhesion.

The most important effect of UCITA at the logical layer is that it can allow owners of copyrighted software to prohibit reverse engineering, whether it is necessary to achieve interoperability or to see how it is that the software controls content. The Cyber Patrol case offers the clearest illustration of the implications of UCITA at the logical layer.

Cyber Patrol offered software that allows users to filter out offensive materials. The software operated by blocking certain sites on a list that the company maintains and updates periodically. Users of computers on which Cyber Patrol's software was installed could not view materials blocked by the filter on their computer. The software could be used by parents to control what children see, but also by employers to control what employees see, libraries their patrons, and in general allowed anyone who controls a system's configuration to filter the information available to users of this system. Cyber Patrol kept its list of blocked sites secret.

Two individuals, Eddy Jansson and Matthew Skala, reverse-engineered Cyber Patrol in order to find out what the filter blocked. They released a book about breaking Cyber Patrol and a program named cphack. When run on a computer that had Cyber Patrol installed, cphack allowed the user to browse the database of blocked newsgroups and Web sites. It could also be used to determine the password used by the person who

installed Cyber Patrol on the system the user was using, so that the user could shut off Cyber Patrol without the permission of the person who installed the filter.

Mattel, then the corporate parent of Cyber Patrol, sued the two individuals and their Internet service providers for, among other things, breaching the license for Cyber Patrol. The license prohibited users from reverse engineering the product. The reasoning was that, assuming the two had purchased a legal copy of Cyber Patrol in order to reverse engineer it, they had to have agreed to the license under which it came, because receiving the software without returning it constitutes acceptance. Reverse engineering for purpose of learning how a program works is usually considered a fair use under copyright law.[35] In particular, reverse engineering of one product that is intended to allow the release of software that does not compete with that product but rather analyzes and criticizes it, is not itself a derivative work of it, and is distributed noncommercially, is certainly a fair use. Basing the suit on breach of license, however, makes these public policy considerations irrelevant to the suit. The "promise," not the copyright, is being enforced. The case settled, the defendants promised not to distribute their work and transferred copyright in the essay and the software to Mattel,[36] presumably to allow it to prevent others from publishing it.

The case illustrates the functionally equivalent dangers that UCITA presents through its validation of mass-market clickwrap licenses to the dangers the DMCA. Rather than accept the publicly determined balance between incentives and access that copyright law presents, vendors of software can impose their own concerns through the contractual elimination of user privileges. Some of the limitations embedded in copyright law, which

[35] Sega Enterprises, Ltd. v. Accolade, Inc., 977 F. 2d 1510 (9th Cir. 1992).
[36] http://www.islandnet.com/~mskala/cpbfaq.html#whatsthis

vendors seek to circumvent using license provisions, are constitutionally required. At the very least this includes some level of robust fair use and the freedom to use facts and ideas.[37] To the extent that state contract law extinguishes those rights by enforcing licenses that deny users those privileges, it should be seen as either violating the First Amendment or as preempted by the federal copyright law.

A court deciding the cphack case should have followed the logic of *New York Times v. Sullivan*.[38] Where a private right under state-law is sought to be used in a way that involves the state in the suppression of core expressive activity, that right must give way to the extent necessary to make it comply with the First Amendment. In this case, at the very least the state law enforcement of the license had to be limited to the extent it sought to eliminate rights embedded in federal law in order to keep copyright protection in harmony with the First Amendment.

Considering the Effect of the Design of More Traditional IP Rights

The possibility of utilizing the software layer to control the communications that utilize it point to a direction in which further research and public policy consideration are necessary. While the DMCA and UCITA present the most immediate extensions of legal rights to control the logical layer, traditional IP rights also entail, in first instance, a right to control uses of software.

The most salient examples have arisen in the context of antitrust. First, looming above all others, is the experience with Microsoft's control over the operating system.

[37] Harper & Row, Publishers, Inc., v. Nation Enters., 471 U.S. 539 (1985); Feist Publications, Inc. v. Rural Telephone Service Co., Inc., 499 U.S. 340 (1991); Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569 (1994).
[38] 376 US 254 (1964).

Spanning scores of pages, the district court in its finding of facts laid out how control over a bottleneck in the logical layer permitted Microsoft to control to a large extent the framework within which users interacted with information and culture through their computers. Control over the boot sequence and the start-up screen were used directly in order to manipulate the users' perceptions of the options open for them to install programs, to change their interface, or to access the Internet.

Microsoft used its control over the desktop to shape the information available to users about browsers available, or Internet content providers. In turn, it used that control to demand that others, who wanted users to know about them, say or refrain from saying certain things—to wit, requiring AOL and other Internet service providers, and Disney and other content providers, not to mention Netscape.

The implications of the specific content demands that Microsoft made (not mentioning Netscape) may touch only those who care about consumer welfare. But the mechanism—using control over the logical layer to shape the information flow to and from users who require access to that logical layer in order to communicate—should raise a general concern. Similar concerns about how AOL could use its control over the AOL Instant Messenger and ICQ utilities to control the content that users would get, and focus it on Time-Warner content, was an important consideration in the FCC's approval of the AOL Time Warner merger. The FCC required AOL to allow competing instant messenger applications to interoperate with AOL Instant Messenger, precisely in order to prevent the emergence of the instant messenger utility as a logical bottleneck that allows its owner to shape the information that flows over it.

While these cases have occurred in the antitrust context, they suggest a more general concern with how "normal" intellectual property rights, unless properly tailored and attenuated, can permit their owner to exert some control over the information flows the software makes available. This requires close attention in designing the core common infrastructure to issues that have not traditionally been thought of as implicating the concerns that animate the First Amendment. Software patents have in the past few years blossomed, despite significant criticism of their efficacy given the nature of innovation in software development. Extending copyright or patent protection to software that sets a standard, in particular, has the possibility of giving the owner powers functionally akin in its sphere of control to those exercised by Microsoft over the operating system. In cases like *Lotus v. Borland* and *Mitel v. Iqtel* the federal courts of appeal refused to permit a copyright owner to use its ownership of an application that has become a standard to block competitors. But the Supreme Court affirmed *Lotus v. Borland* by an equally divided court, leaving open the possibility that basic copyright law could be read to give owners quite significant control over the logical layer, control that could undermine the sustainability and efficacy of the core common infrastructure. The development of such an infrastructure therefore requires quite extensive care in all these areas that have to do with the creation and definition of exclusive private rights in software.

Public Provisioning:

A New National Software Foundation to Support Open Source Software

Open Source Software and the Core Common Infrastructure

Open source software is a non-proprietary model of organizing software production. Its central organization feature is that projects are identified and undertaken on an ad hoc basis by a small number of developers who identify a problem, begin a solution, and release the solution under institutional conditions—a license—that prevents appropriation of the code. Other computer programmers around the world who are interested in the project collaborate on a volunteer model, using, debugging, and extending the program as part of a small or large scale collaborative effort. There is no "company" that controls the software and gives commands as to who should develop what, when. Peers collaborate by extensive communications about the software, and offer their relative talents for a variety of reasons ranging from fun to glory to learning. Software developed on this peer-based model of production performs central functions on the Internet—most web servers, almost all mail servers, and most scripts use open source software.

The core institutional attribute of open source is that the code is not appropriated, and is accompanied by licensing provisions that do not permit those who extend the code to appropriate the code and make it unavailable for examination and creative reutilization by others. As a design component of a core common infrastructure, open source therefore exhibits two important desiderata. First, it is incompatible with appropriation, and its relationship to the possibility of utilizing the logical layer of the infrastructure to controlling information flows is therefore similar to the relationship between a commons

in spectrum and that type of control. No one controls the infrastructure, and no one has incentives or opportunities to design the infrastructure in a manner that is biased in favor of certain types of expression. Second, the software is open for review by a wide-ranging and diverse group of computer programmers. Biases that do creep into the system and make it less than fully open are easily exposed and fixed.

Public Provisioning

Open source software development has become an immensely important phenomenon in software development over the course of the 1990s. It has done so despite the absence of substantial commercial gain to anyone involved in it until 1999.[39] Still, the commercial gain may be no more central to open source than the occasional scientist made rich from a development makes personal profit a primary driver of academic research into basic science. While government support has not been necessary for the emergence of open source software, the same reasons that justify government investment in basic science and in libraries also support investment in open source software. Just as public provisioning could play a part in developing the physical layer of the core common infrastructure, so too it can play an important role in building its logical layer.

In September of 2000, The President's Information Technology Advisory Committee stated and recommended

> Open source software development efforts are a promising means to enable high end computing and should be considered an important infrastructure investment by the Federal government. The Federal government should share in the open source development activity and be prepared to fund the development of appropriate new tools and to support, distribute, and provide maintenance for that software.

[39] When the success of Red Hat made quite tangible the potential benefits in the traditional economic sense to be reaped from engagement in open source.

The recommendation relied on the committee's judgement that open source software development had a number of advantages over proprietary software development for robust, technically sophisticate complex software of the type fundamental to the logical layer of the core common infrastructure.

Implementing government support for open source development is not necessarily easy. Defining who contributes how much, what is to be valued, how to distribute the support without skewing, upsetting, and bureaucratizing the production process are all important and difficult design question. Nonetheless, at this stage it is important to recognize the role of the government in supporting the development of an open source logical layer to the core common infrastructure, and to begin to study the mechanisms of implementation of such support.

Content Layer

The focus with regards to the content layer will be solely on deregulation, and not on provisioning. We have a long tradition of public provisioning of what might be called the content layer of the information environment. Funding for nonprofit scientific research, and public funding of artistic creation are the most visible examples. There are perennial debates over the level of public funding relative to private funding, but these do not concern us here. The object of the core common infrastructure is not necessarily to advance any particular type of speech, nor even to advance noncommercial speech *per se.* The object is to remove structural barriers so as to permit anyone, or any group, to create and exchange their own information, knowledge, or cultural statement. Consistent with

this object, the focus in this discussion of the content layer will be on removing structural barriers to communication, not on funding desirable production and expression.

UCITA

The UCITA can operate, as explained earlier, at the logical layer to prohibit reverse engineering, for example. More directly and extensively, UCITA can operate to alter drastically the usability and accessibility of the content layer of the information environment.

Consider a term appended to the news reports of a technology news service called CNET: "Information contained in this CNET News.com report may not be republished or redistributed without the prior written authority of CNET, Inc." Under copyright law, the information contained in a report, as distinguished from the expressive form that it takes, is not the property of the reporter. There may be a very limited "hot news" exception to this general rule,[40] but certainly nothing that would encompass the broad claim of right expressed in CNET's terms.

Most courts prior to the passage of UCITA would not enforce such a term.[41] Some relied on state contract law, finding an absence of sufficient consent by merely using a site or software that had a term attached to it, viewable only after the transaction had been completed,[42] or that they were unenforceable contracts of adhesion.[43] Others relied on preemption, stating that to the extent state contract law purported to enforce a contract

[40] International News Service v. Associated Press, 248 U.S. 215 (1918); National Basketball Association v. Motorola, 105 F.3d 841 (2d Cir. 1997).
[41] Mark A. Lemley, Intellectual Property and Shrinkwrap Licenses, 68 S. Cal. L. Rev. 1239, 1248-53 (1995).
[42] Step-Saver Data Systems, Inc. v. Wyse Technology, 939 F.2d 91 (3d Cir. 1991).
[43] Vault Corp. v. Quaid Software Ltd., 655 F. Supp. 750, 761 (E.D. La. 1987), aff'd, 847 F.2d 255 (5th Cir. 1988).

that prohibited fair use or otherwise protected material in the public domain—like the raw information contained in a report—it was preempted by federal copyright law that chose to leave this material in the public domain, freely usable by all.[44] While the Seventh Circuit held otherwise,[45] this was the majority position prior to UCITA. UCITA introduced the enforceability of mass-market licenses, adopting the position that use was consent, and limiting enforceability only where there is unconscionability, not where there is enclosure of the public domain or extension of proprietary rights beyond what copyright law provides.

Limitations on the extent of protection that copyright law affords to owners are not design "bugs" that can be fixed by contractual arrangements. They are purposeful design features intended to further the public interest in disseminating copyrighted works, and in leaving them somewhat open for creative reutilization. To support UCITA is to think that private parties reaching agreements in mass-market transactions will systematically do better than public law at designing access rights to information and cultural goods.

To hold this belief one needs to ignore two important facts. First, intellectual property rights are designed to give their owner some market power, and work only if they do so. In the absence of market power, prices are driven to marginal cost, and the marginal cost of information goods is zero, and in any even well below average cost. If copyright works at all, it works by giving owners at least enough market power to engage in infra-marginal pricing to an extent sufficient to cover average cost. There is no reason to think that this market power will be perfectly calibrated to allow owners to cover

[44] Vault Corp. v. Quaid Software Ltd., 847 F.2d 255 (5th Cir. 1988).

average cost and no more. There is also no reason to think that the market power will be exercised only as to price, as opposed to access and prohibition of creative uses that might substitute for, and compete with, the work.

Second, mass market transactions are the context in which private ordering is least valuable as a mechanism to bring to bear the particular information of the parties to a transaction on the design of the transaction. Terms are declared in advance by vendors who have no better knowledge of whom they will apply to or how than do public officials who make generally applicable law. The costs of negotiating around these pre-set terms are high, and they are therefore likely to stick.

Under these two facts, private ordering is not obviously preferable to public ordering of access to, and particularly creative utilization of, public goods like information and culture. UCITA is an excellent vehicle to increase the rents vendors of information and cultural goods can collect. It is not a particularly good vehicle to make public policy about the private provisioning of the public good called information, or about how the capacity to be a creative participant in social and cultural discourse is allocated in society.

As a practical matter, the regulatory impact of UCITA can be negated at least at three levels. UCITA can be resisted at the state legislature level—only two states had adopted the Act by the end of 2000, and there is time to simply avoid the UCITA becoming a generally implemented law. Second, federal judges can be persuaded that the Copyright Act preempts UCITA to the extent that its provisions are used to enforce overly restrictive constraints on access to and use of informational or cultural resources. And

[45] ProCD, Inc. v. Zeidenberg, 86 F.3d 1447 (7th Cir. 1996); Hill v. Gateway 2000, Inc., 105 F.3d 1147 (7th Cir. 1997).

finally, if federal courts do not do so, Congress can be prevailed upon expressly to amend the Copyright Act to preempt UCITA to this extent.

The Sonny Bono Term Extension Act and "Limited Times"

The most direct expression of the constitutional commitment to the public domain is the limitation that the U.S. Constitution places on Congress in Article 1, Section 8, Clause 8, known variously as the Intellectual Property Clause or the Patents & Copyrights Clause. There, the constitution, while empowering Congress to give authors and inventors exclusive private rights to their works of authorship or inventions, expressly limits Congress to granting these rights "for limited times."

The basic idea behind the time limitation is that the accretion of human knowledge and culture over time, signified in the constitution by the Enlightenment term "Progress", crucially depends upon an intergenerational conversation. Prior generations speak, and future generations then build upon that expression in making their own cultural universe, at once new and rooted. Individual contributions to this human conversation are valued, they are encouraged through the grant of limited monopolies on using cultural elements of the conversation, but they are, in the end, released into the stream of conversation to become part of the public domain.

The last four decades of the twentieth century saw a retreat by Congress from this basic understanding of the relationship between the monopolies it is empowered to create and the progression of human discourse and culture. The industrial model of information production that took root in the twentieth century, largely as a result of the unique economies of mass media distribution, does not treat its products as parts of a continuous

intergenerational conversation. Information products are goods with some rather attractive characteristics. Once produced, they do not fall into disrepair (their embodiments might, but Alice in Wonderland is as fresh today as Dumb and Dumber is stale), and require almost no maintenance. Inventories can be built over time, available for release and reutilization as long as any portion or aspect of them retains commercial value. It is precisely these characteristics that make the "limited times" constraint imposed by the Copyright Clause so valuable to the public. But in the industrial model this limitation presents an inconvenient and "artificial" end point for the revenue stream from a product.

Dazzled by the industrial conception of the "limited times" exception, Congress has extended the term of copyright 11 times over the course of the past four decades. The latest iteration was the Sonny Bono Term Extension Act, which extended the term of copyright protection by an additional twenty years. And, like previous instances, did so retroactively. A challenge to the Act, based both on its violation of the "limited times" "limited times" constraint of the Copyright Clause and on the First Amendment was rejected by the Court of Appeal for the D.C. Circuit, but the case is still in the appeals process.[46]

Freeing the components of common cultural heritage to be used by everyone in society for creative expression rooted in a shared heritage is crucial both to individual expressive freedom and to a rich democratic discourse. Limiting the time of copyright protection to that which is necessary to justify investing in creating a work would secure a core of common cultural materials, from which all can take to make their own expressive moves. It is difficult to tell with precision what the appropriate length of

protection is under this measure. But one need only imagine a producer reassuring his investors that a movie he is pitching will indeed turn a substantial profit between seventy-five and ninety-five years after its production to realize that the current term of copyright is too long.

The term of copyright protection must be cut back, both across the board and in regards to different kinds of information and cultural products, each according to its own economic life-cycle. Some of this may be done by courts, through imposition of the "limited times" constraint as the plaintiffs in *Eldred v. Reno* have sought. But much of what is necessary will have to be done by legislative action, which will require sustained political engagement.

Rights in Raw Data

In 1991, in *Feist Publications, Inc. v. Rural Tel. Serv. Co.*, the Supreme Court held that raw facts in a compilation, or database, were not covered by the Copyright Act, and could not be so protected consistent with the constraints imposed by the intellectual property clause.[47] The Court held that the creative element of the compilation—its organization or selectivity, for example, if creative—could be protected under copyright law,[48] but that the facts compiled could not. Copying data from an existing compilation was therefore not "piracy;" it was not unfair or unjust; it was purposefully privileged in order to advance the goals of intellectual property—the advancement of progress and creative uses of the data.[49]

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[46] Eldred v. Reno, 2001 U.S. App. LEXIS 2335.
[47] 499 U.S. at 349-50.
[48] 17 U.S.C. § 103.
[49] *Feist Publications, Inc. v. Rural Telephone Service Co., Inc.*, 499 U.S. 340, 349-50 (1991)

The years since the Court decided *Feist* have seen repeated efforts by the larger players in the database publishing industry to pass legislation that would, as a practical matter, overturn *Feist* and create exclusive private rights in the raw data in compilations. Because the Court rooted its *Feist* decision in a robust interpretation of the intellectual property clause, efforts to protect database providers therefore eventually settled not on a *sui generis* quasi-property right, as that recognized in European Database Directive,[50] but on an unfair competition law, based in the Commerce Clause, free and clear of the inconvenient weight of *Feist*. In fact, however, the primary law that has repeatedly been introduced walks, talks, and looks like a property right.

Imagine a database producer that hits on the business idea to collect and tally information about the voting patterns of legislators throughout the United States, hoping to sell the information to lobbyists. It turns out that this database is a bonanza for political scientists. The producer now decides to offer access to this information to political scientists for a fee. Under the proposed database protection law, a political scientist who copies the data, runs analyses on the information it incorporates, and publishes the results in a scholarly analysis of the responsiveness of legislatures to, say, petition drives, would be breaching the database owner's newly-minted rights.

As with the hypothetical political scientist, access to information about the world we live in is central to the project of understanding it and discussing it. There is no economic study that suggests that a new exclusive right in raw data is needed by the database industry. Indeed, the growth of the private database industry has been unaffected by legal changes over the past quarter century that affected the extent of the availability of property-like protection to raw data. The rents available from enclosing

[50] Directive No. 96/9/EC on the legal protection of databases, 1996 O.J. (L 77) 20.

compiled data are, however, sufficient to drive some players in the industry to seek this new right. And the power of concentrated, well defined interests in Congress relative to that of the more diffuse interests of all those who would benefit from access to the data leans heavily on Congress eventually to pass an exclusive right in raw data. In order to retain raw information in the public domain, and to make it available as a resource for all to use, it is important to prevent the creation of such a right. Whether this can be done before the right is passed, at the legislative level, or after it is passed, by challenging its constitutionality both under the Copyright Clause and *Feist* and under the First Amendment, remains to be seen.

Even if the congressional law can be stopped, other avenues have more recently opened to appropriate raw data. In particular, some litigants have turned to state law remedies to protect their data indirectly, by developing a trespass-to-server form of action. The primary instance of this trend is *eBay v. Bidder's Edge*, a suit by the leading auction site against an aggregator site. Aggregators collect information about what is being auctioned in multiple locations, and make them available in one place so that a user can search eBay, Yahoo, and other multiple auction sites simultaneously. The eventual bidding itself is done on whatever site the item's owner chooses to make his or her item available, under whatever terms are imposed by that site. The court in *eBay v. Bidder's Edge* held that the automated information collection process—of running a computer program that continuously requests information from the server about what is listed on it, called a spider or a bot—was a trespass to chattels.[51]

The result of a common law decision of the *eBay v. Bidder's Edge* variety is to create a common law exclusive private right in information by the back door. While in

principle the information is still free of property rights, reading it mechanically—an absolute necessity given the volume of the information and its storage on magnetic media accessible only by mechanical means—can be prohibited as trespass. The practical result would be equivalent to a federal exclusive private right in raw data, but without the mitigating attributes of any exceptions that would be directly introduced into legislation. To prevent such an eventuality, if these cases cannot be resisted on state common law grounds, they must be challenged either on preemption grounds—based on the copyright law—or on First Amendment grounds, on the model of *New York Times v. Sullivan*.

Linking

In a variety of cases, parties have attempted to prevent others from linking to their sites. A link is an address, embedded in the HTML code of a World Wide Web document, of a computer that has information on it. The address, the URL, sometimes includes the internal address used by the remote computer to identify specific documents stored there, and sometimes includes only the address of a general access point to the stored documents, the home page. Linking—the mutual pointing of many documents to each other—is the very core idea of the World Wide Web. It is what sets it apart as a mode of organizing information from the various linear and hierarchical principles of organizing information that preceded it—like the lexical ordering of dictionaries, or the topical/lexical ordering of the Dewey decimal system.

In a number of cases parties have sought control over the linking practices of others. Most directly, in *Universal City Studios v. Reimerdes*, the movie industry sought and received an injunction prohibiting the defendants from linking from their site to

[51] eBay, Inc. v. Bidder's Edge, Inc., 2000 U.S. Dist. LEXIS 13326.

places on the Web where users could access a particular piece of software called DeCSS. The case was litigated under a provision of the DMCA that prohibits trafficking in utilities to break encryption that protects copyrighted materials. DeCSS was a utility that permitted users to circumvent the access-control measure that protects DVDs. In this aspect of the case, the court prohibited the defendants from telling others where they could find this software by linking to sites that made a copy available. Many disagree about the wisdom or constitutionality of the underlying prohibition of DeCSS. Irrespective of that question, however, there can be little disagreement about the concern with the type of injunction the court in that case issued. Its prohibition on linking was intended to limit the spread of information about the availability of software that the government deems harmful to the common weal. This prohibition provides a crisp example of the censorial possibilities of prohibitions on linking.

A more subtle effect occurs when parties seek to prohibit others from linking to them or to control how they link to them. The quintessential case involved a service that Microsoft offered—sidewalk.com—that provided access to, among other things, information on events in various cities. If a user wanted a ticket to the event, the sidewalk site linked that user directly to a page on ticketmaster.com where the user could buy a ticket. Ticketmaster objected to this practice, preferring instead that sidewalk.com link to its home page, so as to expose the users to all the advertising and services Ticketmaster provided to the users, rather than solely to the specific service sought by the user referred by sidewalk.com. The case settled, and another similar case, Ticketmaster Corp. v. Tickets.com, Inc.,[52] was resolved in an unpublished opinion that focused on

[52] 2000 U.S. Dist. LEXIS 12987 (C.D. Cal. Aug. 10, 2000).

other aspects of the case. This leaves us with no current holding on whether courts will enforce a right to control how others link to one's documents.

At stake in the linking cases is who will control the context in which certain information is presented. If deep linking is prohibited, Ticketmaster will control the context—the other movies or events available to be seen, their relative prominence, reviews, etc. The right to control linking then becomes a right to shape the meaning and relevance of one's statements for others. If the choice between Ticketmaster and Microsoft as controllers of the context of information may seem of little normative consequence, it is important to recognize that the right to control linking could easily apply to a local library, or church, or a neighbor. The right to prevent linking is a right to prevent others from evaluating what is relevant as among a set of documents one makes publicly available on the Web. It is a right to prevent others from placing one's own contributions to social discourse in a different context and setting than one originally had in mind. As long as one can deep link to publicly accessible information tidbits without anyone controlling access, there can be many ways of accessing it, contextualizing it, and thereby understanding it. But once a right is established to prevent deep linking the owner gains the power to condition access to the specifically sought information. The owner can require that access be gained in a particular way, subject to a particular set of messages and in an informational context it sets.

Trademark dilution

The centrality of commercial interaction to social existence in early twenty-first century America means that much of our core iconography is commercial in origin, and

owned as a trademark. Mickey and Barbie, Playboy, or Coke are important signifiers of meaning in contemporary culture. Using iconography is a central means of creating rich, culturally situated expressions of one's understanding of the world. Yet, as Jamie Boyle has pointed out, now that we have permitted the burning of the flag as expression, trademark law has made commercial icons the sole remaining venerable objects in our law. Trademark law permits the owners of culturally significant images to control their use, to squelch criticism, and to define exclusively the meaning that the symbols they own carry.

Examples are legion. Under trademark law, the United States Olympic Commission was permitted to allow a sports event for athletes with disabilities to be called the Special Olympics, but prohibit gay and lesbian athletes from organizing the Gay Olympics. The Archdiocese of St. Louis was permitted to prevent an adult entertainment company from calling its website papalvisit.com, and placing information about the papal visit to St. Louis alongside links to adult entertainment materials. Jews For Jesus were able to prevent a Jewish critic from using a site named Jews4Jesus.com to argue his case against what he perceived to be the error of their ways. Statements such as those expressed in a poster "Enjoy Cocaine" in the colors and style of the Coca-Cola trademark are also squelched.[53]

One particularly interesting example are cases brought by Playboy Enterprises, Inc., against an internet search engine that, in response to queries for "Playboy," would present users not only with links with the word "playboy" in them, but also with advertising to competing adult publications who paid for this feature. Here the core

dispute was over the meaning of the term "playboy" in the American language. The search engines, and other pornographic publishers, took it to mean "soft porn"—a not implausible interpretation of the term. The company, on the other hand, to secure the attention of those seeking "Playboy", sued to secure the right to control what meaning Internet users attached to the term. The magazine lost in that case, and the search engine was permitted to continue to exercise its own decision as to what the search term "playboy" meant for its users. But the case represents quite vividly the role that trademark law has come to play, particularly since the passage of the Anti-Dilution Act of 1995. This Act unmoored trademark law from its traditional focus of protecting consumers from confusion, and instituted a property-like right to protect the value of famous marks *as* famous marks, for their value to their owners, not their usefulness to consumers.

Trademark law, like copyright law, permits some fair use. As with copyright, however, the general recognition of fair use is insufficient, if the actual cases in which trademark can successfully remove culturally significant icons from the universe of materials available to commentators are too numerous. As with copyright, trademark law can lock up important building blocks of expression, particularly when untethered from its original consumer confusion rational. It is therefore important to apply the general framework of the First Amendment to assure that the recognition of trademarks does not inhibit speech that does not mislead consumers or unfairly compete commercially with the owner of the mark.

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[53] Coca-Cola Co. v. Gemini Rising, Inc., 346 F. Supp. 1183, 1189 (E.D.N.Y.1972) (that case, decided long before the anti-dilution act, extends its interpretation of "confusion" required by traditional trademark law

Core implementation of Copyright Act

While the past few years have seen an explosion of exclusive private rights in information, the core implementation of the Copyright Act itself is a central element in defining the availability of cultural resources for individual expression and culturally-rich discourse. The scope of rights—what it is that the person who owns a copyright can prohibit and require payment for—and the definition of fair use and other user privileges enumerated in the Copyright Act, are the central elements in defining the boundary between the public domain and the enclosure. An important element in deregulating the use of cultural resources for creative expression—both individual and civic—is to revisit the scope of rights—in particular as they apply to use of copyrighted materials in other works—and the definition of privileged use, most importantly fair use.

The primary determinant of the extent to which use of cultural and information materials is regulated is the scope of protection that copyright offers the rights holders. The right to prevent copying has been interpreted, for example, to include the right to prohibit use of a poster depicting a copyrighted quilt/silk screen as set design for a church scene in a sitcom. In the scene, at most 80% of the poster appears slightly out of focus for 4.6 seconds, on the wall behind the characters whose interactions are the focus of the scene. Additional partial views, in the background of 1-3 second shots, added up to 26-27 seconds.[54] The Court nonetheless determined that prohibiting such use was within the scope of a copyright owner's rights. Now, the setting might have been particularly appealing for the artist. The use was by a commercial channel—the Black Entertainment Television cable channel. The copyright holder was the artist herself, and her work

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to cover creation of negative associations with the product, a concept incorporated into the dilution concept.
[54] Ringgold v. Black Entertainment Television, Inc., 126 F.3d 70, 76-77 (2d Cir. 1997).

appeared to be used precisely because it evoked a uniquely African American voice. But the principle set by the case was to treat such remote and minimal uses of works as within the scope of the exclusive rights. This brings within the scope of copyright much more than could seriously be considered necessary in economic terms, and more than could comfortably sit with an information environment relatively open for a creative cultural give and take. The law is not settled and clear yet as to what the precise scope of the right is with regard to such uses of visual works within other works.[55] The point, however, should be clear. Defining what is included within the exclusive right is the first and central move to defining the set of rules that regulate use of cultural and information materials in new expressions.

The classic instantiation of a relatively narrow definition of fair use that blocks civic discourse is the interpretation given the fair use defense by the Supreme Court in *Harper & Row*.[56] The case concerned a news report in *The Nation* magazine about the upcoming publication of former President Ford's memoirs. The report used excerpts from the memoirs. Its publication prompted *Time* magazine to rescind a contract with Ford's publisher to serialize the memoirs prior to publication as a book. The *Nation* story was a 13,000 word news article, the subject of which was the memoirs of an ex-president, at the time still considered a viable candidate to run against his successor. The article

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[55] Sandoval v. New Line Cinema Corp., 147 F.3d 215 (2d Cir. 1998) More generally on the differing approaches, and the still open debate over the scope of rights, see Andrew R. Bechtel and Arati R. Korwar, Copyright and the Creative Use of Visual Artworks in the 1990s, 4 Comm. L. & Pol'y 431 (1999); Woods v. Universal City Studios, Inc., 920 F. Supp. 62, 63-64 (S.D.N.Y. 1996). (12 monkeys); Brooke A. Masters, Sculptor, Cathedral Sue Over Movie's Art, WASH. POST, Dec. 6, 1997, at B1; James Reston, Jr., Inspired Art or Stolen Art?, N.Y.T., Feb. 11, 1998, at A29. See Brooke A. Masters, Va. Judge Tells Filmmaker to Settle Suit or Halt Video, WASH. POST, Feb. 11, 1998, at B2. National Cathedral Artist Suing Time Warner Over Sculpture, AGENCE FRANCE PRESSE, Dec. 6, 1997; Amsinck v. Columbia Pictures Indus., Inc., 862 F. Supp. 1044, 1045-46 (S.D.N.Y. 1994). Jackson v. Warner Bros., 993 F. Supp. 585, 588 (E.D. Mich. 1997). Leicester v. Warner Bros., No. CV95-4058-HLH, 1998 U.S. Dist. LEXIS 8366, at *7 (C.D. Cal. May 29, 1998).

quoted verbatim a total of 300 words from different places in a 200,000-word manuscript. The 300 words reflected editorial judgment concerning the most important information in that manuscript. At most, the use of the excerpts cost the copyright owner the value of serializing excerpts from the manuscript in a magazine (valued at $12,500). It was not claimed that the publication in *The Nation* adversely affected sales of the book itself. Needless to say, there was no finding that former presidents or other officials will refrain from publishing their memoirs should they lose the expected value of serializing in magazines. Despite these factors the Court held that the use of the excerpts did not fall within the bounds of the fair use defense.

Justice Brennan directed his spirited dissent at this narrow construction of fair use:

> The copyright laws serve as the "engine of free expression" only when the statutory monopoly does not choke off multifarious indirect uses and consequent broad dissemination of information and ideas. To ensure the progress of arts and sciences and the integrity of First Amendment values, ideas and information must not be freighted with claims of proprietary right.
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> . . . .
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> The Court has perhaps advanced the ability of the historian—or at least the public official who has recently left office—to capture the full economic value of information in his or her possession. But the Court does so only by risking the robust debate of public issues that is the "essence of self-government."[57]

Since *Harper & Row*, the Supreme Court has adopted a potentially more robust definition of fair use, in *Cambell v. Acuff-Rose*, which focuses largely on protecting "transformative" use. The definition of fair use under this test will largely determine the extent to which fair use will be an effective institutional limit on enclosure of information

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[56] Harper & Row, Publishers, Inc., v. Nation Enters., 471 U.S. 539, 558 (1985).
[57] 471 U.S. at 589-90, 604 (Brennan, J., dissenting).

and cultural materials. The implementation by the lower courts has not been uniform in its implications. In the *Free Republic* case, the "transformative" element may have actually hurt, rather than helped, the ability of users to make a fair use of newspaper stories. There, the users took whole individual stories out of newspapers and posted them on a conservative discussion forum for threaded discussion. This was not considered a "fair use," even though the economic impact on the newspapers was likely minimal, the discussion forum was a political, not commercial, endeavor, and the reutilization made the articles into active objects of discussion in a particular political context.

A variety of questions about the definition of fair use will require analysis in the context of a new technological environment, with potentially important implications for the economics of information and cultural production and its dissemination. Should "transformative" mean only additive production of a "new" work, or should qualitative displacement and determination of the relevance of a work also be deemed "fair"? Should the noncommercial nature of a use be determinative, at least to the extent that it does not substantially harm the core market in the work used? Should fair use be different for different types of work, depending on their economic structure? Should, for example, news and nonprofit-produced works, that are less copyright-dependent, be more freely reusable than films, which rely more heavily on copyright? The object of analysis, more generally, must be a steady push critically to analyze the appropriate role of fair use in making information and cultural resources available for common use.

Conclusion

The freedom for all users to participate in building our information and cultural environment is the greatest promise of networked communications. It is a freedom tied directly to the core values of democracy and autonomy that underlie the American commitment to freedom of speech and a free press. To secure this freedom, however, we must build a core common infrastructure that will allow commercial and noncommercial, professional and amateur, commodified and noncommodified, mainstream and fringe to interact in an environment that allows all to flourish and is biased in favor of none.

This report has outlined a general approach to building a core common infrastructure that would support such a free information environment. Its core thrust is to require a deep re-examination of our information policy at all layers of the information environment—the physical, logical, and content layers. At each of these layers, ossified assumptions about proper policy, and entrenched interests of those who would shape tomorrow's information environment in the mold of yesterday's, are leading to regulatory actions that hamper and constrain the emergence of a free information environment.

As an alternative approach to infrastructure policy this report suggest two complementary lines of action.

The first approach involves a series of changes to law that would permit the emergence of sustainable commons at each layer of the information environment. These commons would then provide the infrastructure and resources of first and last resort, available to support all types of approaches to information production and exchange, and all kinds of speakers. Because these will be commons, not proprietary systems, they will not be susceptible to the manipulations and the concerns over centralization of control

over information flows that proved endemic in proprietary infrastructures throughout the twentieth century.

The second approach is the introduction of public provision of the physical and logical layers of the information environment. Public investment could provide an alternative infrastructure that would be declared formally a public forum, and made available for uncontrolled expression and discourse protected from censorship under the most stringent of standards of judicial review.

Neither element of the operative agenda seeks to displace private infrastructure and information and cultural production. Rather, the purpose is to create resources alongside the commercial, proprietary system, which would complement the proprietary systems and provide solutions to some systematic difficulties that our experience with purely private provision of the public goods of information, culture, and the means of public discourse has underscored.

The digitally networked environment opens up new possibilities for structuring individual expression and political discourse. It is at least probable that policy decisions we are making today will shape the pattern of discourse and the effective freedom to speak for decades to come, if not longer. It is incumbent upon those who care about freedom of expression and about facilitating robust, open democratic discourse to find ways to improve our information environment during this period of great opportunity.