Open Code· Open Content · Open Law
Building a Digital Commons

■ **Strategic Planning Session
Session Paper**
Harvard Law School
Cambridge, Massachusetts

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Dear Colleagues,

The most important message I took from the May 20 strategic planning meeting was that the case has to be made for the importance of open code to a wide audience. I want to share the story of the Berkman Center's own case to make within Harvard, and I hope others of you will share stories of your own.

Earlier this spring, the Berkman Center proposed the formation of a legally independent nonprofit entity - a consortium of educational centers to foster the development of open software, open research, and open content (<http://www.opencode.org>). The Provost of Harvard responded to this announcement with a note stating that the permission of Harvard's President and Fellows would be required for the Berkman Center to sponsor the formation such an entity "outside Harvard," (<http://www.opencode.org/faq/>).

This is, I believe, a request from the hierarchy of Harvard to be persuaded of the wisdom of the path we at the Berkman Center espouse. It is an opportunity for us to present our case for open code in an open way to the leadership of a great educational institution - an institution with a glorious past, a glowing present, and an uncertain future.

Even more important, it is an opportunity to explain, not only to the administrative hierarchy of Harvard, but also to others in similarly situated institutions and to the world at large, why openness in code, content, and law is essential to the future. It is an opportunity for us, in conjunction with other institutions, to attract and engage an international audience to consider the argument for openness, to deliberate in structured and moderated discussion, and to form rough consensus.

The Provost's caution provided background for our May 20, 1999 strategic planning meeting, and it provides the Berkman Center with an agenda for the coming year, leading, we hope, to a positive result in time for Harvard's Millenium Internet & Society Conference, May 2000.

Unlike the frontier Columbus opened when he discovered America, there are no pre-existing purple mountains and fruited plains in cyberspace. Cyberspace exists only as we build it, and how we build it is up to us.

So, the key strategic insights for me from our May 20 meeting relate to who we are and what we can do. We represent the integration of three important communities: coders, teachers, and lawyers. We have the capacity to challenge the boundaries of our separate cultures in service of an open cyber environment. We can combine our talents to design open architecture. We can, as coders, build it. We can, as teachers, fill it with open content. We can, as lawyers, defend it.

We are making an argument for open information technology. We need to understand, articulate and project our argument. We need to explain the relationship of open code to freedom, justice, security, and education.

We intend to initiate and foster a campaign for open IT that makes the issues of openness central to the institutional, local, national, and international politics of the future.

We are building the environment in which we intend this argument to develop(<http://opencode.org/courseware>).

The Internet was born of public spirit out of government and education. It grew in the eighties as an open domain. In the nineties it was discovered by capital investors, who realized that investment in Internet produced exponential return. So began a still-growing rush of capital into the Internet that has produced an unprecedented growth of the proprietary domain. But there has been no balancing growth of the open domain. Rather, we must organize and build it. We need to convince our institutions - government, academic, philanthropic - that the creation of a substantial open domain serves their missions.

Our institutions are largely run by people who do not understand the medium into which they are being rushed. To persuade our institutions to invest themselves in an open knowledge domain, we need to offer comprehensive vision, scalable demonstration, open organization, and a positive business plan.

Harvard, like other similarly situated institutions, faces three broad options: (1) Do nothing. Just keep going as we are, with pens and yellow pads; (2) Invest in helping teachers reach new audiences and teach in new ways; (3) Set up Harvard.com - commit to the commercial online education business.

Harvard's business model is currently based on tuition, endowment and product sales, the last a relatively recent and rapidly growing phenomenon in which a product-sales business orientation threatens to extend from sales of sweatshirts to sales of courses.

The model of university as producer of knowledge-as-product-for-sale is a closed one. Knowledge is treated as property to be copyrighted, patented, classified, licensed, and litigated. Under this closed model, creative work cannot progress without negotiations about license fees (the ambit of legal "fair use" at a minimum). As faculty become work-for-hire, money becomes the currency of the campus, and legality the dominant feature of relationship. Under this model, the nature of Harvard will change fundamentally - for the worse, I think.

The community of scholars at the heart of the academy trades riches for a comfortable secure environment in which to think, research, and teach. This community, comprised of intellectuals who do not hold money paramount, will be oppressed by a commercial/legal environment.

The Berkman Center aspires to demonstrate a different model - open IT, we call it. We encourage cooperative work dedicated to the open domain. Faculty, students, staff, alumni, relatives, and friends are permitted and encouraged (though not required) to work together in the public interest. Intellectual community and creative process is our product, knowledge the by-product. This approach galvanizes spirit and produces educational works of great distinction and wide public utility. Furthermore, this model maintains the community of scholars while avoiding the meanness of money and licenses. It will enhance the prestige of the institutions that contribute and become part of it. But there are questions. In particular, can such a model be sustained by tuition and endowment?

open IT

Who will support IT?
Who will join our list?(<http://eon.law.harvard.edu/cgi-bin/opencode/join_in.cgi>)
Who will participate in our next lecture and discussion series?(<http://cyber.law.harvard.edu/online>)
Who will contribute talent? (<http://cyber.law.harvard.edu/people>)
Who will contribute funds? (http://cyber.law.harvard.edu/sponsors.html>)
Who will work with me in a patent group to advance the open genome and defend open code? (<http://www.open code.org>)
Who will work with Larry Lessig to found the Berkman Press?
Who will work with John Perry Barlow to develop open MP3?
Who will work with Eric Eldred to build a Copyright Commons?(<http://cyber.law.harvard.edu/cc>)
Who will work with Dave Lubin and Caroline Hunter on Jamaica as a demo developing nation?(<http://cyber.law.harvard.edu/cyberjam>)
Who will tell friends we need help?

We think we have a working business model. We service an open knowledge domain to an audience of customers we judge best able to contribute to it. That is and always has been Harvard's mission and the mission of educational institutions in general. open IT is a mission we hold in common with other great institutions, so let us join to build a magnificent common resource for us all.

Charles Nesson
aka eon

Reclaiming a Commons

Lawrence Lessig[†]

Draft 1.01

Keynote address,
The Berkman Center's "Building a Digital Commons"
May 20, 1999
Cambridge, MA

"If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea, which an individual may exclusively possess as long as he keeps it to himself; but the moment it is divulged, it forces itself into the possession of everyone, and the receiver cannot dispossess himself of it. Its peculiar character, too, is that no one possesses the less, because every other possess the whole of it. He who receives an idea from me, receives instruction himself without lessening mine; as he who lites his taper at mine, receives light without darkening me. That ideas should freely spread from one to another over the globe, for the moral and mutual instruction of man, and improvement of his condition, seems to have been peculiarly and benevolently designed by nature, when she made them, like fire, expansible over all space, without lessening their density at any point, and like the air in which we breathe, move, and have our physical being, incapable of confinement, or exclusive appropriation. Inventions then cannot, in nature, be a subject of property."[1]

It's been ten years since our victory in the cold war was declared: ten years since communism in Europe fell, and with it the last European regime where Karl Popper was an enemy, and Karl Marx a friend. We fought this cold war over many generations, for an ideal of the open society. For the ideal that political and social society should be a

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[1] VI WRITINGS OF THOMAS JEFFERSON, 1790-1826, at 180-81 (H.A. Washington ed., 1854) (letter to Isaac McPherson, August 13, 1813) (quoted in Graham v. John Deere Co., 383 U.S. 1, 8-9 n.2 (1966)).

place where ideas run free, where creativity and progress is not directed from on top, where no one controls your mind. We won that war. The revolutions of 1989 were revolutions in the name of that open society.

Two years ago, when I came to Harvard, Charlie Nesson was talking about building a commons in cyberspace. I had no idea what he meant. He spoke about the need to support the building of a space in cyberspace free from control — open and free, and there for the taking. It seemed to me just a little nuts. What could he possibly mean? The idea sounded old; the dreaming of a child of the sixties. And anyway, why would anyone need to build a commons? Cyberspace was not a limited space; there would always be more to build. It is not like the American continent was; we're not going to run into the Pacific Ocean some day. If there's something you don't have in this space, something you'd like to build, then add it. I thought.

We are at a critical moment in the history of our future and we are, in an important sense, stuck. We are stuck, I suggest, because most think as I did. Most imagine this space to be infinitely expansible, and hence perpetually unclosed. Most think, as the world did a decade ago, that the open society has won and that the closed society has now scampered off stage; and most think that Jefferson is right — that nature protects ideas and that nothing can bottle them up.

But Jefferson was wrong. And because he was wrong, the closed society is not dead. And because the closed society is not dead, Charlie Nesson is right. We are at a critical

moment in the history of our future because we are now witnessing the defeat of what 2000 years had built — the defeat of the open society, the triumph of the closed society, and the destruction of an intellectual commons. And we are witnessing this defeat at the hands of an enemy who has coopted the rhetoric of our past—the rhetoric of freedom that was organized under this ideal of property.

Property.

Jefferson loved property. Jefferson loved small farms as property. He loved the production of the small farmer; the world where everyone was a farmer, and the pride that would go with the management of a small farm.

The open society loved property. Our battle against communism had as its ally, commerce. Freedom would come, libertarians said, through free markets. Open markets meant open societies. Property freely traded would mean human rights regularly respected. Property was the engine of freedom; it would be the power that would resist the tyranny of a state. And there was little danger from this engine of freedom itself; it could not get out of control; for as Jefferson taught us, "Inventions then cannot, in nature, be a subject of property."

But Jefferson, again, was wrong. Or partly wrong. Not wrong in his soul, for the one part of American constitution that Jefferson most worried over was the part that gave Congress the power to create monopolies in ideas, and monopolies in expression — the copyright and patent clauses. In letters to Madison, Jefferson harangued the founder Madison about the dangers of monopoly, especially the monopoly over ideas. But Jefferson was a nut in his time — a respected

and powerful nut, but certainly mainstream.
And Madison was a dealmaker. Madison knew
that we were still too mechantilist to give
up the idea of state sponsored monopolies. So
he convinced Jefferson that a small
compromise was necessary. He convinced
Jefferson that we could sell this tiny bit of
our founding soul and nothing would happen.

And in the end, Jefferson was quieted. He
thought the First Amendment would restrict
the copyright clause; he thought nature would
protect ideas; and he thought that if he was
the first patent commissioner, then he could
set a precedent that would guide the office
for the indefinite future. (Which for
Jefferson, was not very long. Jefferson
believed in perpetual revolution; he believed
in a bit of blood every 19 years; his horizon
was short.)

But in his compromise, Jefferson suffered
an illusion of "is-ism." That nature would
protect ideas from property; that nature
would assure no one could control the flow of
air; that nature would guarantee ideas would
expand like fire without losing their density
at any one point — these were features of the
world that Jefferson knew and he assumed that
they were features of any world that anyone
could know.

But they are not.

We have just entered the era where
Jefferson's picture proves false. Not in a
technical sense or in a literal sense, but in
any sense that Jefferson would have meant it.
We have entered an era when nature doesn't
protect us — when, if we want ideas to flow
freely, when if we want, as he said, ideas to
flow "from one to another over the globe, for
the moral and mutual instruction of man, and
improvement of his condition," we have to
make it that way. We have entered a time when

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nature can be architected to control ideas and to control their spread; when nature can be architected to defeat the free flow of information; when nature can be architected to close the open society. And all this closing can be done in the name of property.

We have entered a time when the code of our time can be written such that people who own intellectual property have the power — through law and through this code — to close off, to stop, to own an idea, and to make criminal, or at least extremely difficult, any use of that idea beyond the owners permission. We have entered a time when we can construct the world against nature.

How?

The last few years of internet politics has produced a lot of laws and the following slogan: The internet should be left to take care of itself; that government can do no good there. This slogan was given to us, surprising as this might seem, by a democratic president, through the words of his architect for national health care — Ira Magaziner. And so for the last few years, we have lived in this blissful state where we had this illusion that the net was taking care of itself free from government's influence.

But of course, it is not true that government has stayed out. It is not true that the government has not moved to regulate the internet. The last few years has seen an extraordinary expansion of intellectual property rights, from the extension of the copyright term to just about a billion years, to the criminalization of code that might circumvent copy protection (even if that circumvention would have been for the

purposes of fair use), to the unbelievable expansion of patent protection, through the birth of a doctrine called the business process patent, to the likely passage this congress of a data base protection bill.

This is government regulation on a massive scale. And it is regulation that is producing an extraordinary power to *own* and hence *control* ideas. And when tied, as it will be, to technologies that support it, it will produce a cyberspace that will defeat Jefferson's nature — that will make it possible perfectly to control the use and distribution of content. We are seeing the laying of a foundation for our future that will give to holders of "intellectual property" a power over that property that they have just never had. This will be a power that Jefferson thought impossible; a power that is wildly disproportionate to the balance that intellectual property was always to be; a power that will make it possible to close the society that we now call open.

The power through property to produce a closed society — where to use an idea, to criticize a part of culture, to quote "Donald Duck," one will need the permission of someone else. Hat in hand, deferential, begging, a society where we will have to *ask* to use; *ask* to criticize; *ask* to deploy; *ask* to read; *ask* to browse; *ask* to do all those things that in a free society — in a society with an intellectual commons, in a society where no one man, or no corporation, or no soviet, controls — one takes for granted.

We are building the foundation for the society we thought we defeated 10 years ago.

I want to describe in real terms, with real examples, just what I mean. But before I

do, I want to note what increasingly strikes me as the most amazing feature of this change. Where is the ACLU? What's most amazing about this change — once you see it, and its potential — is that the leading civil rights group in America doesn't seem to get it. The ACLU is off fighting the important battle over pornography in cyberspace. Extraordinary resources are devoted to defeating Congress' attempts (now two, but no doubt there will be more) to keep porn away from kids. And while I'm all for defeating COPA or the CDA, or whatever "C" word they come up with the next time around, I am completely baffled about the priorities. Sure, civil liberties will be compromised if COPA stands; sure, cyberspace will be different if porn is not available at every turn. But compared to the threat that this enclosure movement presents? Compared with the threat to free speech that the propertization of ideas presents?

I have been told that there is an obvious answer to this question about priorities — the cynic's answer. Follow, the cynic would say, the money. Playboy might be our ally in the fight to keep speech free on the net; they won't be our ally in the fight against excessive copyright.

But I don't buy cynical explanations. Something more is going on. The better answer looks not to evil motives; the better answer is a cultural deficit. The better explanation is that we as a culture don't see what Charlie was talking about two years ago when he founded this Center. The better explanation is that we have been taken in by a bad-Chicago rhetoric that now gets whored about by content holders. We don't see a place for an intellectual commons, because we can only see a place for "property."

Now this is bad Chicago rhetoric, because even Chicago doesn't argue for the propertization of ideas and content that this new world will make possible. No one — certainly not I — is against intellectual property *properly conceived*. No one — and certainly not I — is against a limited but effective right of authors and inventors to control what they write or invent. The battle here is not against IP; the battle is against the end of *balance* in IP. It is against IP at an extreme, not IP in its historical form. I am arguing against something new, not rearguing the battle that Jefferson lost. For in my view, Madison had the better of the argument; some monopoly is needed. But the question is not whether some is needed; the question is how much.

So to get a sense of the extreme that we are building now — to see just how different it is from the regime we had before — consider this:

Twenty five years ago, only companies like the New York Times could be a publisher; only companies like IBM could produce software; only companies like Sears could sell lots and lots of things. This was the "nature" of life in the 70s — terrible disco and an economic reality that meant big was all we could have. The economic constraints of real space life were such that only the big guys controlled. Nature made it so, the economists said, and you can't fool nature.

Dawn broke, Ronald Reagan said, in the 1980s. It was morning in America. Dawn broke on an era where power — here computing power — was given back to ordinary people. This was the PC revolution, where a boy named Bill could outwit the titan IBM and transform a tiny bit of second-rate code into the

dominant operating system on fastest growing computer platforms in the world. Power shifted because the economics had changed, as power became logic-embedded in silicon.

The 1990s were the 1980s, squared. As ordinary users became increasingly connected, the internet began to deliver on the extraordinary promise that the image of Bill Gates beating IBM created. It made possible a world where more than the New York Times could publish, where software could be made somewhere other than at IBM, and where anyone, not only Sears could sell. The internet removed all the barriers to entry that had produced this controlled world of bigness. It removed the structures that made it natural that there be just a few who decided what the rest of us would see.

Now the thing to understand — the point to get, the idea that Charlie saw, the *argument* — is this. The laws that Congress is writing — call that east coast code — and the laws that coders are writing — trusted systems, copyright management schemes, authenticated interactions, or west coast code for short — these two types of code together are rebuilding the world of the 1970s. These two types of code in conjunction are recreating the barriers to entry that the internet had removed. They are making it again the case that only the New York Times, or its 21st century equivalent, Ted Turner, and Sears, or its 21st century equivalent, Disney, and IBM, or its 21st century equivalent — well, let's let that go — control what gets built, or said, or sold in this space.

How?

All speech in cyberspace is "published" which means its all putatively at the hands

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of copyright law.[2] When copyright law is forgiving, when penalties are slight, when enforcement is lax, when enforcement is expensive — when all that is true, then it doesn't matter that lots is within the domain of copyright law.

But when west coast and east coast code changes so as to make it easier to enforce copyright law — to make it a felony to breach copyright law, or the law of west coast code, to make it cheap to track the offender — then the fact that everything is within the possible domain of copyright law begins to matter a lot. It becomes extremely important. All speech in this space that isn't purely original (and what speech have we heard that is) is now speech within the domain of control of someone else.

But the IP maven will say, yes but even if everything is "published," not everything can be copyrighted. Copyright requires some originality. Not everything I write is "original."

True. And we have a Supreme Court case, *Feist*, which importantly establishes this important principle. But Congress is fevorously trying to work around this Supreme Court case. It is fevorously working to pass a database protection bill that will turn the uncopyrightable into the protectable. Data as property. Facts, controlled. A felony to "use" the data protected by the database protection bill. And if successful, then

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[2] Why this should be I am not sure. It seems to me that we need a much more convincing argument to show why every word I utter in cyberspace is considered "published" yet every word I utter in real space is not (only those fixed in a tangible medium in real space are published). It is just an accident of design that cyberspace fixes everything; why that accident should determine the law is unclear to me.

again this fact that everything is within the domain of Congress's law becomes all the more pressing. To publish, you must be the New York Times, or Disney, because only the New York Times or Disney could afford to negotiate the rights. Every use becomes a subject of negotiation of rights; and when this is true, only those who can afford negotiators will be able to use.

"Rights." Negotiate the rights. Because here is the first key to what a commons means. It means the right to speak, or to publish, or to produce, without having to get the permission of someone else in advance. It means a world without prior restraint; where there is a space to speak which depends upon the will of no one else.

To speak, and also to produce. To invent, or to create. For it is here that the second, and less well known threat to a commons in cyberspace is emerging. And this one, I fear in some sense, is worse than copyright.

Patents. A patent is a government regulation. Some bureaucrat in Washington decides whether your invention is novel enough to deserve a 20 year government monopoly. To know this, the examiner must examine the other inventions out there. The examiner must look to see whether someone else had the idea first. That's called a check of prior art. Only if your idea is truly novel will you have the right to a patent.

At least that's the way things are in theory. In practice, the world is very different. In practice, examiners spend less than 8 hours on average checking prior art. In practice, all the incentives are in favor of granting a patent, not denying it. The examiner gets a bonus for granting the monopoly; no incentive for finding that, in

fact, no monopoly should be granted. The scales are tilted in favor of handing out monopolies. We are paying bureaucrats money to give hand-out, state-protected monopolies.

But, the maven says, so what? If the patent is bad, you can challenge it. If it is bad, it will be declared invalid.

True, if you have on average 1.2 million dollars to challenge a patent, you can challenge it, and you may well win. But who exactly would have that incentive? Forget the cost: if you win, its not as if you get the patent. If you win, no one gets the patent. The idea is returned to the commons. And who benefits then?

The reality is that these monopolies are important barriers to entry. Big companies collect patents not for the purpose of making money from licenses; big companies collect patents to have something to trade. If it turns out they are infringing, they have something cheap to give away. But only they have something cheap to give away. If you start up a business on the net, run afoul of some patent, even if in reality is a bad patent, your choices are limited: pay or stop.[3]

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[3] A recent study suggested, for example, that the costs of securing a license to design a new integrated chip would be approximately $100 million. In response to this point, a member of the audience suggested this wasn't such a large amount — after all, it costs, he suggested, about $1 billion to build a chip factory, so the IP rights would be just 10%. In my view, 10% on the margin is significant. But in any case, it seems to me to understate the constraint. One need not build a chip factory in order to produce a newly designed chip. If production lines at existing factories can be rented, then the constraint of $100 million before design can begin is still quite significant.

We are recreating the 1970s. We are creating the world where only the big can produce. And we are recreating it through law. *Laws,* not economics; legislatures, not nature.

We need a way to resist this. We need a way to show just why this obsession with property is not the property our framers had in mind. We need a way to show that it will recreate the closed society. We need a way to show that IP has always been understood to mean balance between incentives and the commons. We need a way, as Jamie Boyle puts it, to build an environmental movement within this cause. We need some way to get people to see that the resistance to this propertization is not communism.

But we live at a time when we don't have those resources. We live in a time when the rhetoric is not there. We live in a time when even Barney Frank says about database protection, Why should I defend the right of someone to "steal" information.

"To steal." "An idea." Ideas, contra Jefferson, apparently are the stuff of property. For only property can be stolen.

We need a way to counter this emerging imbalance in thought. The Berkman Center's Open Society project is a small contribution to that need. Our aim is to build links — to get people to see how in our past we have always understood the value of openness. Not just in Stallman's Free Software Movement, not just in the Open Source Movement, but throughout our tradition, this is our past.

And so we have launched a range of projects to stir up this idea that the

commons is the open society. Challenging the copyright extension bill, building open code for education, pushing open governance projects, funding open research, supporting open source: This is an effort not to coopt, but to argue in support. This is an effort to get people to see that there is an undeniable place for a commons in a free society, and that commons will only exist if it is built.

It is an effort to do what Charlie said to do two years ago. It's my nature to be pessimistic and dark about this future; forgive me for that. It is Charlie's perpetual nature to be optimistic and hopeful. We should be thankful for that. For when we look back on this era a generation from now — if we look back freely and openly — it will be the inspiration of the ideas of the Jeffersons like Nesson that will still inspire. My job in this opening is not to inspire. It is to scare.

Let this day open the open society again. In all its possible facets.

Panelists:

    James Boyle, **American University**

    Yochai Benkler, **New York University**

    James Fishkin, **University of Texas**

    Daniel Weitzner, **W3C, MIT**

Moderated by:

    Lawrence Lessig, **Harvard Law School**

With Guest:

    Eric Eldred, **Publisher, Eldritch Press**

Lawrence Lessig: [All four panelists] are going to answer this question of what do we do to get people to see how [the enclosure movement and the lack of a concept of the commons] is a problem and how we approach it. What ideas do we carry out from that? Now, I'm going to give them-- this is like a quiz show-- I'm going to give them four and a half minutes to think about that because I want Eric to talk about, for four and a half minutes, an actual example of a case where we're attempting to get people to see the values in the commons. And so, Eric Eldred is-- what do you call yourself? The publisher of Eldritch Press. Why don't you take a couple minutes while these guys work and tell us a little bit about that.

Eric Eldred: Basically, I started in 1995 to try to use the World Wide Web as a way of publishing books electronically, just as sort of a hobby. I had worked in some computer companies before, doing this professionally, and it seemed to me that the World Wide Web had some possibilities for doing it in ways that were not being exploited through electronic books like Project Gutenberg or something like that or MIT's Shakespeare Project that began with text files basically without any hyperlinks.

So, I wanted to try to experiment with it. And it sort of became a full-time hobby and a big project. I actually signed on to take care of a number of authors like Nathaniel Hawthorne and Oliver Wendell Holmes and so on. And not that I'm an expert in them at all, I'm just a sort of shooter hacker with some average computer hardware and software at home.

I use a Linux machine, I have a cable modem, and I use the new software - VI and that sort of thing to do

my HTML coding. And it's pretty much what anybody could actually do if they had some experience in doing it. What I'm saying is that I didn't wait for Harvard or for anyone else to fund me to do it, I just started it. And I found that the capital to do it is infinitesimal. It's nothing. The ability to do it - I can scan a book while watching television or reading another book. I mean, there is really hardly anything to it, you got to just have cooperation. Even the Supreme Court Justices said that you can learn to do it in 15 minutes.

But my part was in presenting it as best I could. Not only proofread, but also by being able to put in links, notes, explanatory materials, linked to other things on the web, and making it into a sort of living document that the people could interact with. I actually started an essay contest, did some on-line learning experiments with e-mail, had some discussion groups about literature, and so on.

And all these things are attracting a lot of interest in other people that also began doing it - I wasn't the only one who was doing it, I found that there was probably 100 or 200 people around the world who were all engaged in scanning books and making basically what is a public library on-line. And I thought we had good prospects to do that until last October when the Congress suddenly passed the Sonny Bono Copyright Term Extension Act, which basically put off limits most of the stuff that was published after 1922 in this country.

So, I was upset about it. Shut down my site. Told people to write the President to veto it and I don't know exactly how people like Larry heard about my case - maybe you could comment, I don't know. Did you read it in the *New York Times* or something?

So, it got a little attention and it even got 50 law school professors to write a letter to Congress saying this was bad policy: that was ignored. So, that's the first of it. It's really not open source or whatever that's important, it's the fact that all the content that would be available on the Internet in the future has a very strong chance of being controlled by just a few people.

Instead of the Internet's potential for, [people] like me with a cable modem and hardly anyone having a server at home; there's no legal basis for my doing that. It's only at the pleasure of the powers that be [who] can interrupt us at any time. It's illegal for me - it is a

criminal act - to violate or infringe anyone else's copyright because of the NET Act; [for example] an MIT student who puts something online, even though I'm not selling it. Also, the Digital Millennium Copyright Act makes it into a criminal offense to remove somebody's copyright notice from something.

What we're faced with is media giants that want to turn the Internet into "Pay T.V." And people like me, who represent some of the older generation of the Internet, are trying to resist that by showing people that they can participate in a political democracy and produce works on their own. And other people can then discuss this sort of thing and we can reach conclusions together instead of having all our intellectual property locked up in some board room in Hollywood or in New York City.

> [What is important] is the fact that all the content that would be available on the Internet in the future has a very strong chance of being controlled by just a few people. *E.Eldred*

There are many other - the Copyright Term Extension is only the first of these things. There's also the Section 2B to the Universal Uniform Commercial Code, which puts a shrink-wrap license on the goods.

I found that my effort to keep things open was not exactly the same - not congruent with the open source or open code or open software movement. It seems that putting things into public domain is not considered to be advisable by the free software people. They feel that it's better to copyright it and then put a license onto the software so that, in the future, it will be kept open. I think this is a matter of discussion; it's something that needs to be explored, how it's possible to generalize from the case of Open Software that we started with, to Open Content in the case of books or media or music, or other things. The whole idea of digital media is beyond that of software now; it's not exactly on the same plane.

For instance, it's possible to copyright a piece of software without having to actually deposit the source code of the software in the Library of Congress. This seems to me a shame because it means that when the copyright term expires and the software theoretically returns to the public domain, it's quite likely that there won't be an equivalent that will actually be able to run the binary code. It seems to me that it should be a requirement to have the source code available - the full amount of source code - in the file.

Also, when you take the Digital Millennium Copyright Act, it's extending copyright to something that is unbelievably complex. When you have a case that might potentially violate the Digital Millennium Copyright Act, it really hinges on the fact of whether or not this is copyrightable, or whether it is copyrighted. In order to determine that, you actually have to look at the source code to determine whether you copied the source code. Without having that on deposit, you can't tell whether you are violating it. So, there are many issues - concrete issues - involved in this.

In order to determine now whether a work that was first published after 1922 is actually in copyright or was not renewed in time, after 28 years, it's necessary to look at some big red books called the Catalog of Copyright Entries that are published twice a year by the government printing office through the Library of Congress Copyright Office.

These books are not that easy to find. I used to - there were none in New Hampshire where I live, and so I had to go to the Boston Public Library to look at them. Last year, I believe, they had a flood in the basement, which destroyed quite a lot of their government documents, including some of their Catalog of Copyright Entries. So, I was kind of stuck.

I think it should be on-line so that you can determine whether or not these were registrations that were properly renewed. The government has not seen fit to put online the registrations between 1950 and 1977 so that it's very difficult to determine whether or not these are actually under copyright.

The second thing is if you did find that, for those under copyright, you might want to write the copyright owner and determine whether or not it would be possible to use it to publish it online. And then the people would be happy.

It turns out that it's extremely difficult to find out who owns these copyrights. People are dead. Their heirs may have inherited it and they don't know about it. A book has been long out of print and the publisher is no longer in business. And it's a real nightmare. So, what I'm saying is this whole patent and copyright sys-

tem is designed very often to thwart the accessibility of people like me who want to make it available to everyone in the world.

And I don't think the way things are going that the forces are strong enough to represent the public and make it possible to have something like an Open Public Library. If we rely on the institutions like large libraries like the Library of Congress or the government or universities or foundations or so on, it's not going to happen.

If you take a case like the Martin Luther King Foundation, for instance, whose estate owns copyright to all his writings. And now there's a case saying that one of these speeches that he gave before a large crowd, that it's actually copyrighted. Well, all of his papers have actually been contributed, donated to the Library of the University of California, Berkeley. First they were at BU, but they disagree with the impression that some of the curators gave the quality of his Ph.D. thesis, but anyway - they're really locked up. They could be made easily available on the Web, but it's not possible to do that. So, what we want to do is to try to make these things accessible and to remove the barriers that big publishers and so on are putting in the way.

Lessig: Jamie, I said I'd call on you last, why don't you go first?

James Boyle: There are so many things to say about this that it just wouldn't even be possible to fit it into the time so I'm going to do a set of snippets, and I'm not even going to try to pretend that they're linked together.

The first is that - let's start with a philosophical point - computers and the Net bring patent into an inexorable crash as two sides of patent hit each other and implode. The first side of patent is that you can't patent ideas, you can't patent natural laws, you can't patent an algorithm, theoretically. But, of course, as soon as you put that into a computer, the computer becomes, according to the recent patent case law, not a general purpose Turing machine, but a special purpose Turing machine and that machine can be patented. So that these computers here are many computers. Each of these is five, six, seven, depending on how many programs are running on it - each of those is a separate computer the way that patent law looks at it. And

those computers working through their algorithms, that's what can be patented, not the idea, the algorithm itself. So, the idea of the Turing machine allows patent law to extend to the very areas it was forbidden to extend to - ideas, algorithms, processes, natural laws. Thus, patent becomes imperial, it takes over far more than we would imagine.

At the same moment, the things that computers allow, in particular communications networks, introduce us in the most obvious way to the reality of network effects. And network effects, among other things, make an economy built on patenting and individual intellectual property rights not feasible. I mean, it doesn't work. Large companies realize this. Many of them engage in patent pools, creating for themselves a little privatized public domain in which they can basically get rid of the intellectual property rights and allow them to exchange, but of course, not everyone can play in those.

This project then, the Open Source/Open Code movement, is located at the hinge of the two sides of patent. It is in the computer - in the general purpose/special purpose Turing machine - that patent policy finds it at war with itself. This represents the light side rather than the dark side of that conflict.

Second, I've got a whole set of things here that are a bit of rhetoric, a litigation strategy, a lobbying strategy, a transactional clinic, technical innovation - let me see if I can pick a couple of things out of this.

In terms of a rhetoric, we need rhetorics which are developed at every level. On the most general level, it seems to me that the public domain, the idea of Open Source/Open Content needs a way of explaining to people why they should care about the public domain and the analogy, which as Larry suggested I use, is to the environment. And in particular, I think we all need to go back and study the invention of the environment in the 1940s and 50s.

The environment, after all, being an idea that didn't exist. There were lakes, there were trees, but where was the environment? How on earth could you get a duck hunter to believe that he/she had something in common with a bird watcher that he/she had something in common with somebody who liked to eat seafood? Nowadays, we all understand - wetlands - sure, you need to preserve wetlands to have any of those things. But where was this perception of common interest? It

comes from the creation of a concept and the concept is the concept of the environment. We need to create the public domain before we can defend it, right?

[Another] thing. I disagree with some of the comments about the impossibility of affecting public policy. I think that's a real mistake. In particular, right now there are government departments, which have budgets and institutional philosophies, which are precisely attuned to the philosophy of the public domain. Some obvious examples: the Justice Department. The Justice Department already, on copyright and a lot of things, looks at intellectual property rights and sees monopoly. Some of it can be exploited. The science establishment within the federal government. There are just lots and lots of places where it is simply not a given. We don't need to say, "Oh, this is going to happen inexorably." Rather, we can exploit the fissures within government departments.

Then there is a really crude thing. We need a set of factoids and connections to people's lives. Factoids, for example, bad patents. Joseph Reagle and I were talking about just creating a page, which would explain to people how bad patents are. And the point is, you can't use the software patents because nobody realizes how ridiculous it is that multi-tasking can be patented or that close a window and open a new screen can be patented. You need patents like the one that I mentioned before which is a patent for calculating the tip on a restaurant check which consists of two columns, one with the amount of the restaurant cost, the meal, the other with 10%, 15%, 20% and so forth and the column going down. That was patented three weeks ago. Now that's a patent people can understand. It's stupid, right? It's just really stupid. We need a lot of stupid patents.

And the idea here - taxpayer assets. This is going back to the public trust argument. Taxpayer assets are being handed over - and again, I want to stress, contrary to what a lot of people may have suggested, the constitutional side of intellectual property law is, I think, extremely hospitable to this.

Courts have - both in patent and copyright - said repeatedly, you have to be an author - you have to be an original author in order to get a copyright. Where

did that come - I didn't see that in the copyright clause. Originality is being written into the copyright clause. The ideas of non-obviousness and novelty have been interpolated into the copyright clause. You can say they're there, so a lot of the things which we're arguing for are no less an extension.

Just finishing up. Two things that seem particularly important. The first is a transactional clinic. It seems to me that the Berkman Center, and indeed they've already started doing this by putting licenses available online. It's just admirably well suited to greasing the wheels of private action. I go back to something that Mr. Eldred said. You shouldn't rely on something that's being done by the government. Rather, we should facilitate lots of people who want to do things in a way which uses Open Code. But that may mean thinking what they would need and making that stuff available, which is also a wonderful experience and the kind of thing that law students should certainly learn.

Finally, technical innovations. I do believe that we don't need to choose between Richard's position, which I agree with, which is we need to fundamentally challenge and rethink the premises of intellectual property. And, on the other hand, the idea that we can work right now with the system we have rather than sort of throwing up our hands and that we can attack it. There are lots of different ways, but it seems to me, here are two. First, I thoroughly support the idea of the prior art databases, both lobbying Congress in order to fund the PTO to create a better prior art database, [and] second, the creation of a decentralized prior art database, which could aggregate the knowledge which is so available on the Net.

[Also], there are lots of other kinds of projects which could use Open Code in the support of Open Code values. I'm a great believer in exemplifying your method in the product. One example, which I'd like to mention is that Ernie Miller from the Yale Law school is trying to work on a program which would allow law - primary legal text, to be available on the Net and to be searchable in just the way that the fancy WESTLAW and Lexis are, by coding them with VRML so that someone could have this distributed database of primary legal text. That's an

> [We need] a way of explaining to people why they should care about the public domain and the analogy ... is to the environment. *J.Boyle*

example of something which, both in its method and in its actual results and values, exemplifies the approach that people are putting forward there.

It seems to me that if we aggregate all of those, then we have the beginnings of a rhetoric - a rhetoric that spans both theory and action.

Guest: Question for you. Tell me, we've been thinking about how to characterize the environmental movement here for a long time. And without having to see the connection with that person who's fishing and the person who wants to watch wildlife - how do you get people to see the environmental elements in the intellectual property - how do you get Barney Frank not to see it as stealing when somebody takes data from him?

Boyle: It has to be a multi-front offensive. The first thing that you do is connect it to things that people already understand as public spaces. So, you connect it for example to schools. You look at - you say you want to put the Internet in everyone's classroom, then what would it mean if the Intermind patent is recognized - how much is this going to add in terms of cost so that you sort of - that's the consequential side - you show people the public values they already hold about the socialization and inculcation of public values in spaces they already understand as public are threatened by this. The second thing that you do is you take the examples of intellectual property where intellectual property is so obviously cutting off access to something that people see in another box. So you say, can someone own a word? So I could forbid you to use the word "Olympic." So you take the answer, "yes." You take situations like that where the free speech challenge is obvious. You take the ownership of the genome. You say, "You mean, someone could own genetic code?" You take all of those examples and by taking those examples, you get people to work back to their understanding of what the core is.

So, then there's a larger sort of - two philosophical points which need to be iterated and worked out in practical examples. The first is the idea of externalities. We understand that the factory that isn't forced to pay

> We need to show the unexpected reciprocal disastrous effects of intellectual property right grants and the Internet seems to be the single best place to do that. *J.Boyle*

for pollution will continue to pollute and will price its products accordingly. We need to think of intellectual property rights as a form of pollution. Pollution after all only happens when people are doing things for a good reason - presumably they want to make widgets. But there's a cost. We need to factor in the cost to the public domain of every intellectual property right grant. The second idea, which the [environmental groups] used, was the notion of ecology. We need to have our stories - this unexpected reciprocal connections among systems which cause disastrous results from well-intentioned interventions. We need to show the unexpected reciprocal disastrous effects of intellectual property right grants and the Internet seems to be the single best place to do that.

Yochai Benkler: Well, I think the fact that we're calling this the Open Code Working Day means that Open Code has in some sense become a rhetorical vehicle to talk about a much deeper, wider problem in society. And that is that we have come to think of all information as controlled. We have come to think of the fact that all information is controlled as a good thing - as something that is just right, works well, because we might call it moral rights because mostly we call it efficient.

What Open Code does is step up in the middle of what we all understand as our economic engine - software production. An instance of human productivity that is fundamentally opposed to our generally perceived unthinking conception of how human productivity happens. And what we need to do is expand the notion that being a productive human being requires that resources be controlled by individuals and mostly by organizations that employ individuals and pay individuals. So I think, to some extent, that the most tremendously important effect of the role of Open Code in the software industry is actually that rhetorical vehicle.

What we have with - the convergence of two things - the development of the digital network environment and the centrality of the information economy to the U.S. economy, at least when we're talking about the national debate - is this opportunity to make a point

about the lack of necessity of property - of individual control or organizational control. The possibility of a common, the possibility of living as productive speaking human beings in a public sphere and in a public domain.

There are at least four dimensions of resistance to this understanding. The first is theoretical. At the level of elite thinking - both economic and political morality, we don't have very strong theories of the commons, and we need to develop them. Information is a particularly good domain in which to do the economic theory debate because within traditional mainstream economics, it's a particularly quirky resource. So, we need to work out the economics of information production to show why it is that exclusive control over products and exclusive control over resources, is not only unnecessary, it is bad. It is inefficient.

And at the level of political theory and political morality, we need to explain why it is that property constrains autonomy. Why it is that property and information controls and constrains not only personal autonomy, but political self-governance as well. And here again, stories are a good thing. When Disney cuts off a story that criticizes security in Disney World that's an easy story to understand how property and ownership over both the content and the means for its carriage constrained public discourse. Those are stories that need to be told to develop a political morality that resists the propertization of our information environment.

The second level is institutional. Because our theories have led us to think that individual and organizational control over resources, and in particular information resources and products, is efficient and just, we have developed a whole series of institutions, and almost like a slapstick, with increasing speed we propertize more and more of our information environment.   And here there needs to be resistance, both at the congressional level and increasingly, this becomes old news, at an elite discourse level. That elite being the judicial elite. The elite that doesn't have to go to the information industries for political donations. And that's where political morality gets truncated in the First Amendment and the particular force of First Amendment and developing that

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portion of the First Amendment that focuses on open access and on decentralization of information production and access to information. So that's the institutional level. And again, at every layer.

The third layer is organizational. You ask - you have universities that understand themselves as being like businesses and trying to professionalize themselves in the sense of becoming more like businesses. There becomes an increasing conception that organizations have been structured along a conception that relies on the notion that information must be propertized in order to produce information efficiently. Therefore, we build organizations around the institutions that serve that theoretical conception. And organizations develop to take advantage of that.

And the classic example is the shifting, and the permission for universities to patent the product of research funded by the government. Here you have a theoretical conception that property and information is a good thing, implemented through an institutional arrangement that permits stuff that, if you would have been directly produced by government paid scientists, would not have been patentable, it would have been in the public domain. Instead, it gets patentable, and you create universities - you make universities get into the business of extracting commercial value from information production, which is a completely different organizational role for them.

So again, the debate needs to be within organizations about understanding their role as freeing up information resources, and then internal debate about organizational frameworks and internal institutional values, such that for example, publishing in a peer review journal, that is online and therefore, doesn't need the economies that sustain Elsevier, becomes possible. We have internal institutional organizational mechanisms that prevent that.

And finally, it's cultural. And that's much harder to reach. That's not something that needs to be done at the elite level, that's something that needs to be done at a much broader level. And that's the notion of, "It's mine!" "I made it." And explaining why it is that infor-

mation isn't quite mine, that information is about relationships and long-term relationships and conversations. And not something that you could plausibly think of as, "I own my statements in this conversation." As though it were a one-sided set of monologues.

And these four dimensions need to worked on at their relative levels - some at the level of institutional organizational leagues, some at the level of mass cultural conversation, in order to crystallize this shift from a conception of a controlled way of being a productive human being, to an open and relational way of being a productive human being.

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> *Y.Benkler*

Lessig: Okay, so Jim, can you take that objective and institutionalize it or tell us how we can get people - especially the last part, to understand culturally the significance of these values?

James Fishkin: Let me step back and set a context for what I want to say. I'm concerned with democracy. And what kind of public dialogue, what kind of public participation will fill the commons even if your commons can be protected from the enclosure movements that [were] described earlier. And the Internet is especially important, both - let's consider two kinds of democracy. One I'll call pseudo-democracy and the other I'll call deliberative democracy.

Lessig: Which are you in favor of?

Fishkin: We'll take a poll at the end. The thing is, the Internet is eagerly used for pseudo-democracy - Oh, and I want to describe two contexts. One is politics generally, and the other is the governance of the Internet. And the prospect of pseudo-democracy is overwhelmingly likely in both contexts. And the possibility of deliberative democracy to fill the public space is only possible with a great deal of work and effort and institutional innovation, which I'll briefly describe just as a possibility.

What do I mean by pseudo-democracy? There was a

- things that purport - mechanisms and events and expressions that purport to speak for the people that don't. And a colleague of mine named Norman Bradburn at the University of Chicago, who I've collaborated with on several of the projects I'll describe, coined the term "SLOP." Self-selected Listener Opinion Poll. And the Internet has now brought to life the SLOP which radio stations were doing before - you know, call in if you - and set on the Internet all kinds of media organizations have SLOPs and now the SLOPs about presidential candidates suggests starting in the primary season. And they purport to represent the public, but what they actually represent is something that - instead of grassroots, the political operatives say what they're representing is something more synthetic, namely, Astroturf.

What it is, is it's an organized effort - if you get thousands of people who are orchestrated to vote for George W. or Albert Gore or whoever it is. The worst SLOP of all, I can't resist mentioning my story, which is the Time magazine had a SLOP about the man of the century - they had an Internet poll about the man of the century. Who was the greatest statesman, the greatest thinker, the greatest warrior, the greatest entertainer, and the best dresser. And for some reason they got millions of votes - and for some reason one person won in all five categories. And it turned out to be Mustafa Khamil Ataturk was the best in all categories because the Turkish people organized and voted around the clock - school children - and he beat - by one press report I had - is he beat Winston Churchill by two and a half million votes and the Greeks were organizing to vote for Winston Churchill in at least some of the categories. Anyway, the point is that they thought it was real democracy to let anybody just vote and call in and in fact vote on the Internet and it turned out to be pseudo-democracy.

And the other problem with democracy - the two problems with public opinion - by the way, I just realized is that a word is what got me all into this because I've been concerned with public opinion - we've been concerned here with public spaces - the whole point

about both is to really - you need a public for both. And the problem with mass society today is that we very often don't have a public. We don't have a shared dialogue and a sharing of concerns and a sharing of information. We have privatistic, isolated activities and we need to create the conditions for a public to fill the public space.

Now, I came up with a way of doing this in prototype. I call it deliberative polling. We take a random sample of the public, give them a question of the ordinary sort, then we invite them to come - it's been done face to face, we invite them to come to a single place where over two, three, four days, they have a shared dialogue under the best conditions you can reasonably imagine for them to form a considered judgment. Balanced briefing materials, access to competing experts, dialogue with each other, people talking to other people from completely different social locations. We did this on PBS in January 1996, Jim Lehrer hosted and it was called the "National Issues Convention." And we brought people from all over the United [States] - we had tremendous problems. There was a woman - it was a National Opinion Research Center at the University of Chicago recruited a sample. There was a woman on a farm in Alabama who - she couldn't come because there was nobody to milk her cow. We sent out a researcher to milk her cow. We brought her to Austin, Texas and we got a very good national random sample of the whole country in a single place and they came to very different views about the issues of the campaign after, compared to before.

We've done this four times in Britain with a television network Channel 4. We're about to do this in Australia before the referendum that they're going to have on becoming a Republic in October.

Now, the thing about deliberative polling - it works. Indeed, we've also had local ones that are a lot cheaper because they're local, but it works, but it's expensive. Because the National Issues committee, we had to have an official airline - American Airlines - I don't mind thanking them - brought people from all over the United

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States - Alaska all the way to Austin, Texas where the thing was held.

Online, we wouldn't have that expense. But could we create real deliberation? There's a book coming out about the National Issues Convention called *A Poll with a Human Face*. Could we give it a human face? Could we really create a context where people could deliberate? And you'd get people in small groups with trained moderators - I think we could and we have a project - Larry, Andrew McLaughlin back there, and I have a project here at the Berkman Center which proposes to do this online, and we found a way to provide computers to a national random sample of the country in a cost-effective way. And we're going to link them in a continuing dialogue if we raise enough of the money, but much less money that I had to raise the last time. And we've got a couple of different contexts.

One context is with the Foreign Policy Association in the context of foreign policy issues in the presidential campaign. But the other context is for, at least in prototype form, the governance of the Internet itself because the Internet, as you know, is going to be covered by ICANN and ICANN is going to have a board of 18 people, nine of whom are selected by technical supporting organizations, and nine of whom are to be selected in some way by the relevant public, whatever that is. One model for that is - that has been a subject of a great deal of public discussion, is anybody in the world can join ICANN and then those people vote.

I think it's going to be - as a political scientist, I think it's going to be Astroturf. I think it's going to be captured. And I think that's going to be form of pseudo-democracy. So, I have proposed, and this is public because this is on the Web, I have proposed a variant of deliberative polling for this problem - to at least be tried out in prototype. And we're purporting to raise money to try it in prototype. But the way it would work is a random sample of Internet users - now of course what internationally that would mean is really daunting, but let's just say a random sample of Internet users who

would create a deliberative council that could be consulted periodically, and would deliberate online in a serious way. And at the end of say, a year, they elect a certain number of board members and then a new sample is chosen.

Now, I've been talking to a lot of technical people, it is not impossible. We are proposing, or I am proposing - I think others here are proposing, to at least try it out on a prototype basis and compare it to the self-selected model. And it will beat Ataturk, I'm certain of it. If the data is collected about both.

And it would demonstrate democracy across national boundaries and borders. But not just any form of democracy, but a thoughtful democracy because the premise of this is that we have so much democracy where people are reacting with a top of their head impression of sound bytes and headlines and people don't even like to admit that they don't know.

So, a lot of the opinions reported in polls don't exist. You know about the famous Public Affairs Act of 1975, which a third of the public had views on but it was fictional. And a couple years ago, the Washington Post decided to celebrate the 20th anniversary of the non-existent Public Affairs Act of 1975 by asking people what they thought of the repeal of the Public Affairs Act of 1975, and they told half the sample that President Clinton wants to repeal it and half the sample of that the new Republican Congress wanted to repeal it and they got completely different results, but it didn't exist in the first place.

So, [an] aspect of pseudo-democracy is non-existent opinions, what Phil Converse at the University of Michigan called "non-attitudes." Phantom opinions. You've got phantom opinions, unreflective voters, and unrepresentative samples and public opinion reported in that form, that is, public opinion without a public, is guiding a lot of our public policy. I mean I was just shocked to read an account that the Clinton Administration - Mark Penn is providing overnight polls, that is, providing some input to choices about bombing targets. Now, if that's true, that's another example of this.

How can we get a more meaningful kind of democra-

> I think people may value the public dialogue more when they can see themselves in it. When they can see what a real functioning public would look like. *J.Fishkin*

cy? Well, the Internet actually offers - I came up with a version of how to fill the vacant public space with a prototype of an engaged public, but the Internet offers the prospect of doing it in a much more cost-effective and repeatable manner if we can make it work.

Lessig: Here's one part of the story that you haven't really emphasized, and I think it connects to what Yochai was saying. One thing about deliberative polls is that you start the process by asking people what do they think about blah, blah. And they give an answer. Then you go into a process of deliberating about it. And at the end of the process you then ask them the very same question. And you compare the results and there are consistently shifts. Now, so one question is, what is the opportunity for using that to achieve the kind of shift in attitudes that I think Jamie and Yochai are talking about - about something like the question of the value of the commons here. So, what do you see as the shift? This is pejorative, but would you call it maturing of the views, or would you call it more stable views, or -?

Fishkin: The deliberative poll - we know, and have studied, and have a number of technical papers to demonstrate, that at the end, the people are much more informed, and they come to considered judgments which have some staying power when we go back to them nine months later. Now, I don't know what this shift - I never know before we do it what the shift would be on any particular opinion - it's always an experiment. However, I had tremendous faith in the results and in many contexts where even adversarial contexts - even some local ones where we've had regulatory contexts where stakeholder groups were at loggerheads - they were just amazed at how sensible the public was if you only gave them a chance. So, I think the public would come to reasonable conclusions - indeed we've done this even on fairly technical issues with electric utility regulation in Texas with the Public Utility Commission. So, I think the public would come to reasonable views, and at least they would be informed.

Now, there are going to be some issues for which

this is inappropriate. There are going to be some issues that are just technocratic issues. If you take the step, however, that you want democracy - my position is, why have pseudo-democracy? Or why have plebiscitary, top-of-the-head, sound-bite democracy - you might as well have or try to have deliberative democracy. So, the Internet opens up a constructive possibility. And part of the effect - I think people may value the public dialogue more when they can see themselves in it. When they can see what a real functioning public would look like. And so, that inspirational factor is I think the answer to the rhetorical question.

Lessig: Danny, you've been closest to affecting public policy in this way, so do you want to continue - do you want to say something about Jim or do you want to take something off that?

Daniel Weitzner: Well, actually, I had thought about going for a kind of an eloquent connection between First Amendment values and all these patent law questions and actually, sitting here, came to the conclusion that there's been enough eloquence, so I'm going to try to pick a fight, or incite a fight between all the lawyers here and all the hackers here, and suggest that an important part of arriving at a rhetoric that helps us all to understand what's at stake here is to end the image of computer programmers, hackers, coders, as a priesthood - that for the first however many years we've been in this kind of fascination with this technology - which is indeed quite fascinating and quite extraordinary and tremendously fun and very important and complicated, and all this other stuff.

Fundamentally, too much of the world is absolutely in the dark about how any of this stuff works and in some sense, picks up on Jamie's point about the little tip-calculating card. I think that if we could end this mystification of what goes on in computers and what goes on in communities with people who code and think of it more like the process of building this building and saying well, there's a wall there and window there, and there's a clock over there - we all understand - probably

> Code … is such a fundamental architectural aspect of our lives in cyberspace that we simply cannot allow it to be controlled in the way that patent law seems to allow it to be controlled. *D.Weitzner*

most of us in this room could not build this building, but most of us understand that it's a relatively common process that goes on and it certainly entails a whole lot of craft and a whole lot of skill, but probably not a tremendous amount of genius.

And probably anyone who was presented with the idea - Jim Fishkin's deliberative polling crowd - if you told them that we wanted to patent a wall, people would say, "Well, that's ridiculous."

And the reason that I think it's important to get past this kind of mystical notion of what the Net is, what the Web is, is that I think it really is the case that we've certainly seen in the case of the Intermind patent on privacy related technology. It will come up over and over again. That, in fact, people are more and more able to use patent law to control very basic things like what kind of walls you can build in cyberspace of what kind of windows you can build on the Web. And I think this is where I really take a page from your view of so many of these issues, Larry, that code - at least at many levels, is such a fundamental architectural aspect of our lives in cyberspace that we simply cannot allow it to be controlled in the way that patent law seems to allow it to be controlled.

And I believe that the way to help people understand that is for us all to get off our high horses and stop pretending that there's great mysticism going on. My view, at least of the technical standards process, for all the brilliant people who are involved, 90% if not 99% of the value of most technical standards, which are now threatened by patents, is in fact in the consensus, not in the design. And that we have to preserve that process of enabling consensus and not allow intellectual property law to stand in the way of that. And since it's 5:00, I'll stop.

Lessig: Thank the panelists. Thank Charlie Nesson for this extraordinary event today.

"Open Code = Communism?"
Larry Lessig says we won the Cold War. But not by force of arms and not by a free press. So why now dismantle the economic system that won that war? Isn't the Open Code movement communism in disguise?

"Tollbooths on the Proverbial Highway"
As a former Director of Technology for the Evil Empire and an Industry Consultant to IBM, our holy grail was to secure the "architecture that all others had to interface with." Larry spoke of the Legal Architecture. Both of these efforts are so deeply technical that "common people" do not see or perceive them. … the owner of the architecture … [can] charge tolls.

"Train the Trainers"
Are we adequately educating law students (and lawyers) in the technical realities of contemporary information flow and control? In balanced views about alternative copyright and patent regimes? As practitioners, judges, legislators, and teachers, lawyers will be central to how this debate develops. Right now, the vast majority are ignorant and complacent.

"Who Am I?"
Discussion began to approach key questions as to definitions and purposes of commons as it relates to communication technology and IP. Still I wonder: What are we talking about and why?

"Light My Candle"
For political discourse, the Internet's power to light millions of candles does not seem threatened by the enclosure movement. (I have been on a discussion group of the MCAS - statewide school testing, which by the way is also a "closed" model perhaps.)

"I Like That"
Larry, run for public office!

"Yoo-hoo, ACLU!"
Why is the ACLU absent? What do you think keeps them outside of this conversation?

"Where's the Opposition?"
Like any fine polemic, Larry Lessig's keynote talk concentrates on its own argument, at the expense of the opposing view. But what would be the strongest case against the Lessig position, stated in terms of a theory of democratic interests? And what are the most important issues among which a balance must be struck?

"Government For Whom?, Part I"
I am concerned and share the doom theory but think regulation shouldn't just be done by the government. As past examples have shown, governments may be more interested in business protections than in the interests and rights of people.

"Government For Whom?, Part II"
I think Bowie has it right. People need to be involved on a broad level beyond those who are here. Those who are frequently dis-empowered need to be include in order to make the cyber commons a real one - not just for those who are always present and included in such conversations.

"Lessig vs. Bollier"
The opening essay in this volume and Lessig's keynote are an interesting contrast. Lessig focuses on legal threats to open source software development; Bollier argues for organization with a larger guiding role which (in my view as a founding member and early developer in Apache) is not necessary.

"No Cathedral Here…"
My view on this is shaped by observation of what central control has done for the cathedral-style open source projects that have adopted it. Two examples that come to mind are gcc and emacs - in both cases, the control mechanisms proved too restrictive, and bazaar-style offshoots have formed… which are much more vibrant.

"How to Help the Bazaar"
A better argument for … central control is to get stuff built that open-source coders have been reluctant to build such as novice-friendly features and user interface chrome.

"Lawyers for Hackers"
Where the open source developers are capable of doing something for themselves, they are best left to do it. However, there are some things that open source developers are not equipped to do for themselves … [e.g.] dealing with legal challenges … [and that is] where I'd like to see the Berkman Center focus its efforts.

"The Commons Must Be Bounded"
It seems that the problem in creating a commons of ideas is defining the boundaries. What ideas should go into the commons and what ideas reasonably should remain patentable. … Historically, universities have produced the "commons" ideas, but in today's economic climate, with fewer and fewer financial resources available for research in the university, that source of ideas is shrinking.

"IP Can Be Good for the Little Guy Too"
Strike a balance between openness and proprietary info. … IP rights are not just weapons for big companies , but are also useful to garage start-ups.

"Captured Govt?"
The government is corrupted by commercial interests.

"Openness and Filtering at Cross Purposes"
Is an open common of information mandatory or optional? Would we be overloaded with information if things were as closed as Larry paints?

"It's the Architecture, Stupid"
The people involved in carrying out the goals of openness in the (anti-) IP context (beyond education as to the issues) may not take account of the full spectrum of tools for doing so (i.e., only focusing on Congress and the courts in legal context, or only focusing on law.)

"Fight the Power"
Since society's interests are not being represented in the allocation of thoughts as public goods, should individuals continue to represent themselves by thwarting and breaking laws that result from the process?
Weitzner suggests the West Coast should get involved with public policy, but West Coast commercial interests are not the same as society's interest.

"Address the Fears of Abuse"
The current energies devoted to enclosure of information are driven by fear of abuse, a pattern from history. 'Abuse' takes vague mental forms in general, driven by concrete examples of theft and misuse. We need to address these fears in such a way that the future cost of evolution and/or disassembly of these enclosure constructs in not extreme, [i.e.] it should involve money and intellectual energy, not hostility and loss of life. We should heed lessons learned (and being learned) from earlier reversals of such enclosure constructs, [e.g.] slavery and economic freedoms.

"Threat to Free Speech Not Overwhelming"
I find the problem or threat to free speech from copyright to be less persuasive than the threat from patents. Why can't I speak? The Internet lets me speak. If it is original - or if I haven't copied - who can stop me. I can understand how extending copyright terms is a problem and I understand the problem of locking up databases, but these problems aren't overwhelming.

"What's the Connection?"
I … don't understand the nexus between computer code and open architecture. Lessig needs to make a clearer case for the proposition that there will be less free speech on the Internet because of change to intellectual property law.

"Trend Toward Propertization or Away?"
I constantly think of the marketplace of ideas - who is in that marketplace? How much time in this collapsing time zone of ours is needed to grab onto ideas of value? [I was] also struck by … Marglin's remarks [on] how proprietary things become free over time - what about the other

way around ? Isn't that our concern? TV to cable to [pay-per-view]?

"The Debate is Too Narrow"
There has been too little dialogue about the implications that IP law extensions have for communications within society in a general sense. The dialogue has only focused on narrow implications.

"Patent is Not Perfect, What's New?"
The concern about software or "business methods" patents is a distraction. The patent system has a long history of imperfection. We need to … pay attention to these problems … [but] they are neither new nor catastrophic.

"OK, What Now?"
I'm interested in the political action necessary to combat these problems. How can we motivate the complacent and/or uneducated populace to demand change?

"Notion of Property Has Been Co-Opted"
I'm struck with the notion that the idea of "property" has been totally co-opted by the industry leaders and is now being used to undermine the "open society." I don't see how we're in conflict with Jefferson's small farmer - there is individually owned property as well as the commons. Sure, someone has to create the common; someone has to convince the people it's necessary, but it's not intended to exclude invention - it's the bazaar/forum/agora where we must share the things we create in private.

"ISO Architects"
Who will serve as the architect of academic/corporate collaboration boundaries to commons?

"Lawyers to the Fore!"
It would be an error for [the Berkman Center] to try to do things such as coordinating conversations between open source leaders. There is a need, which [the Berkman Center] is well suited to fill - attempting to restrain laws and court rulings inimical to open source development.

"Oops."
It was perhaps a bit awkward to schedule this meeting on top of LinuxExpo.

"The Disappearing Commons"
Commercial interests will not protect the commons or the have-nots … nobody really protects commons until they are nearly gone, and have-nots don't usually rise in their own defense until there is nothing to lose … we must at least make noise, point the way, describe and envision the open society.

"How Does Harvard Keep Brand Value?"
… the real reason universities want to control multimedia

[but not] textbooks is that generally textbooks are not created to be learned from on their own, whereas multimedia/distance learning stuff is moving in the direction of replacing traditional instruction. How does a university, in developing [such] materials, protect itself from being replaced?

"A Funny Thing Happened …"
An interesting thing we noticed at lunch [is that it is] the respect of a software license, more than the law beneath it, [that] gives it its power.

"How About a Venue for Continued Discussion?"
All of these discussions need to continue … perhaps even w/o the goal of consensus. More voices doesn't necessarily mean better discussion, but fewer voices almost always limits it.

"What's In It for the Schools?"
Universities already own disciplines … why should they [support] anything which might be … a threat?
Harvard B-School may or may not be better than others, but it costs more and is worth more in the marketplace. This … more than teaching or content or community is what schools are already charging for.

"What's the Beef?"
I'm not sure what the resolution was supposed to be, but I don't think we reached it (unless it was simply to open discussion)

"Educate the World!"
Public opinion is the only thing that will fix the problems of IP law. Now all we have to do is educate the entire world. :)

"Boyle and Weitzner '00!"
It worries me that division within the pro-openness community will … "damn the dime because it's not a quarter." People like Jamie Boyle and Dan Weitzner who are willing to take both sides will be the ones that save us from IP hell, but we have to figure out the best way to help them.

"New Tools Needed - 'Prior Art' Repository"
So long as we acknowledge the desirability of some patent protection for things like software and business processes, we will need vastly improved tools and methods for identifying truly novel and protection-worthy inventions.
Can IT help solve the problem it has helped to create, through more intelligent repositories of 'prior art', mechanisms for robust public commentary on pending applications, etc.

"Rethink Constitutional Values"
Perhaps it is useful/appropriate to … think about what might be called Constitutional values. This means not only

… justifications for IP, but what we mean by "free speech," and what other values (perhaps not part of current Constitutional dialogue) we might want to support & therefore be worried about in terms of code and law development.

"New Life for Common Carriage?"
One of my concerns is not simply the question of IP, but rather (in addition), the concern of telecom regulation. In a world of vertical integration between mass media content providers and access providers (cable, broadcast, satellite, etc.), we need to worry about who controls the pipe. I argue, as a goal, revitalizing the common carriage model.

"IP Limits Itself"
Although I wouldn't rely on this to solve all the problems, [there is a limiting influence:] as IP expands, it becomes counterproductive … [e.g.,] Gnome, which gets some support from the Mexican Government. Why? Because IP is strong enough to prevent Mexico from licensing Microsoft, therefore they support the open source movement.

"What About the Business End of a School?"
What students want and need from the university is quite different from what faculty want and need.
Just how much are those needs diverging now?
If so, what does this mean for the business of higher education?

"What's the Market Value of Education?"
Why don't you let the market decide whether course content has value? If Harvard has better content than Mississippi State, it should have value.

"Dip In, the Water's Fine?"
Why doesn't Harvard test the waters? Let different components of the Law School try different models? Give content away for free like Terry Fisher's course. Or charge like HBS does for content. Provide the facilities and incentives to let faculty experiment and see what works.

"On Campaign Finance Reform…"
I am not sure that intellectual property laws are the problem. Campaign finance is the underlying problem. As long as Congress is behold[en] to private money, the drive will be to keep things closed. The interests that fund Congress write the laws.

Introductory Discussion
9:15 -9:30
Welcome
9:30 - 10:00
Keynote Speaker: Professor Lawrence Lessig, Harvard Law School
10:00- 10:30
Discussion: Reactions to Professor Lessig's Remarks

-**Hal Abelson**: Perhaps large companies could open their patents to standards bodies.

-Scott (HP): There is no force balancing those in favor of extending IP protection. Perhaps also no one argues the other side of database protection legislation.

-**Catherine Crouch**: Some basic research ("a commons of information") should be done by universities, made available to the public. Reduces duplication of effort, but only makes sense within reason. If taken too far, reduces incentives to conduct research for later profit.

-**Danny Weitzner**: Society has some core values re openness. Open source community as Jefferson's yeoman farmer. Must not ignore the legal / public policy process.

-**Randy Davis**: Maybe IP rights not "too" expensive (about 10% of total costs?). The breaking of the technical protection mechanism has been made a crime. Hardware has become sufficiently cheap that a few hundred dollars of equipment can steal an incredible amount of IP.

-**Terry Fisher**:

        I. Strengthening of traditional IP mechanisms. Creation of new rights (for example "publicity rights"). Contracts
            & encryption (regulation through quasi-private mechanisms) - where the economic power is going.

        II. Need to create incentives for placing material to the public domain.

-**David Marglin**: Not so worried about over-commercialization of IP in the long-term because that seems to be the historical trend: A new thing/idea/procedure starts out in commerce (privatized), then put in the public domain later on. But things move so much faster now that perhaps we need to consider how to put new ideas in the public domain even as the ideas are new.

-**Jim Fishkin**: Stopping interference may not be enough to make the Internet live up to its possibilities. Need institutions to facilitate participation.

-**Nolan Bowie**: Need to assure that information gets into the public domain in a reasonable time - not clear that current rules are in sync with modern rate of change of information. People need to participate in policy decisions re IP protection.

-**Robert Thau**: Depending on structure of industry, might need different amounts of legal protection to assure a reasonable return on investment. Biotech might needs lots of legal protection (high capital investment before receiving return), but not so for software (first-to-market advantage). So arguments for legal protections shouldn't be general (i.e. applicable to all industries), rather specific to particular markets.

-**Tamar Frankel**: Loss of some of commons as a result of technological change. Need to create a new institutional structure to restore the balance.

The Values, Challenges, and Effects of Building Open Platforms: A Case Study of Open Education and Discussion Tools (Panel Moderated by Jonathan Zittrain)
10:45 - 11:45

I. Hal Abelson

 A. Universities have been the "hub" for the online commons. But maybe not for long. Universities see themselves as businesses, see distance learning as the future. Textbooks previously subsidized, but now material put on the Internet seems to universities like a potential cash cow. Change in policies re: ownership of IP

  1. Universities want to own the IP created under their auspices

  2. Can't realistically change policies re: textbook royalties because too entrenched, but (some) universities trying to take rights to textbook-like content in new media. One approach: Interactivity to belong to the university while static books (and static CD-ROMs) to be treated as texts. A groundless distinction?

 B. Collaboration

  1. (Some) universities worried of new relationships made possible by the Internet - collaboration between universities (potentially for commercial developments) now much easier.

 C. Digital commons enhances value - learn from the free software movement

  1. The business models for a product (software) need not be in the product (software) itself. Perhaps the content of a university is not the source of the university's actual value. Textbooks cost little (relative to total cost of education) but are so valuable. Perhaps "courseware" (software supporting university courses) more important.

  2. Challenges in courseware

  o Allowing others not just to add their own content but to integrate those additions with the main text.

  o Do we need something like the GPL? (GPL - a model for distributing software - GNU Public License - all derivatives to stay in the public domain)

  o Do we need a czar?

  o Development platform?

  o How to start? It's hard to scale from a small development initiative to something far larger.

II. Dick Nolan

 A. Enabling infrastructure not yet in place.

 B. HBS now has an intranet to relieve its structural impediments. Centralization of data storage improves efficiency.

 C. Harvard University lacks the infrastructure to do the kind of sharing suggested.

 D. Concerns

  1. Opt-outs discouraged because opting out of the intranet would in effect mean opting out of HBS. Benefits of the intranet require full participation.

  2. Existing IS staff may not be best-equipped for the challenge of implementing new technologies.

  3. HBS system does not allow access by users outside the local Intranet. A policy decision (rather than technical)? Some distance learning initiatives being considered, with revenue-sharing.

  4. What if a professor develops original content and then decides to leave HBS? Can he take (a copy of) the content with him? Maybe take a copy once EDS makes the platform available elsewhere, but definitely not remove content from HBS.

III. Terry Fisher

 A. Reflections after teaching an online lecture and discussion series (http://eon.law.harvard.edu/property)

 B. Premise: Content developed by a university for use on the Internet should be available for free. (Why? Because universities ought to be in the business of distributing information, not making money.) What arguments for charging?

  1. Incentive systems within the university - may need to offer some money to content creators.

  2. Just disseminating information isn't nearly as effective as providing information with teaching fellows (who facilitate discussion, give and evaluate assignments, etc.), and TFs have costs.

  3. Cross-subsidies. Say, charging for content to support other socially-valuable enterprises.

 C. Where to get money? Philanthropy, put perhaps not sufficient for large enterprises in the long term. General

resources of university, but an up-hill fight.
D. Organization of the course to be self-funding
    1. Public - free, funded by 2 & 3 below
    2. Continuing legal education - pay money for access to TFs, b/c need credits
    3. Groups from companies - for ongoing training of in-house staff, with confidential discussions within the firm.
E. When a site becomes sufficiently well-known as the premier provider of information on a subject, it gets the power to convince providers of information to give away their content. So, if many universities were each developing similar material, no single group would have sufficient power to get content placed in the public domain. That's a net loss in free content relative to what's available when a single university leads.
F. Relatively optimistic re development of a commons in universities.

IV. Questions re: Open Content

    A. Eric Eldred: Perhaps content providers could increase value of the course ("profit") by making it scarce. But isn't that contrary to the mission of universities (as articulated by Terry). A potential ethical problem since economic incentives contrary to mission.

    B. Daniel Weitzner: Isn't teaching an important part of a university's mission? **Abelson**: Importance of setting up a community. **Nolan**: HBS doesn't underestimate the importance of having people together. Technology as a complement to community - lifetime learning.

    C. Charles: The content of a course includes contributions from students.

    D. Robert Thau: Giving away content and charging for those who "want" to pay is a model familiar to the open code community (a la Redhat). What would need to change to allow collaboration with other universities? **Dick Nolan**: Part of the value of the platform comes from the fact that everyone uses it. Everyone wouldn't be using it at another university (or at another school within Harvard). Not so clear that the software would succeed in that situation.

    E. Mary Hopper: Universities afraid for their survival. Worst vision: Each discipline "owned" by a single university. Worry that "non-top-tier" people would end up doing a university's online development. **Abelson**: It's true that many universities have big aspirations.

    F. Jim Johnston: Let the market decide. If one university tries to charge too much, the market will force the price down. **Dick Nolan**: Agree with letting the market decide. Have to pay content creators what the market says they're worth, so perhaps it won't be so easy (possible) to keep the cost of content all that far down.

    G. Craig Davis: Need to reconcile the past with today's new metaphors. But perhaps metaphors no longer relevant.

    H. Peter Kelman: Universities as a place to bring people together, subject to constraints of transportation. Now we have a new means of bringing people together, a new kind of transportation. Could take courses at various universities (no bus trip from Harvard down to MIT...). **Zittrain**: Perhaps some universities want to bundle their courses; would have to have appropriate IP arrangements with faculty to do so. **Dick Nolan**: Lots of new possibilities, need to look closely at what's possible.

Working Groups (after lunch - 2:15)
o Open Content - How to raise questions of open content throughout the university? (Hauser 101)
o Open Code - Should you own the code you run on? (this room)
o Patents - A threat to open code? (Hauser 105)

Working Group Reports
Open Law/Open Content/Open Code

I. Open Law / Patent
working group presentation notes
        A. Mix of lawyers and technical people
        B. Public policy strategy
            1. Let people know what the real issues are
            2. A litigation strategy
            3. Supporting funding the PTO to develop better prior art databases
                o Perhaps a database specific to Internet technologies, but requires lots of administration
                o Develop an community-based prior art database
            4. Some concern re making changes too quickly
        C. Perhaps a database of prior art specific to Internet technologies, but requires lots of administration.
        D. Convene a broader (international) discussion - include leaders of Internet industry (see www.freepatents.org)
        E. A bumper sticker?

II. Open Content - How can we promote the idea of an intellectual/informational/academic commons?
working group presentation notes
        A. Action Plan: form a conservancy to preserve ideas on the Internet
        B. Use tax dollars to fund the Commons, online.
        C. Instead of taxing people, rely on the market to value the property.
            1. Property owner could donate patented or copyrighted work to the nonprofit
            2. Raise money from philanthropic institutions to buy patents/copyrights for the commons.
        D. Using the property structures to undermine the private nature of property

III. Open Code - Should you own the code you run on?
working group presentation notes
        A. Questions: Why open code as opposed to closed? Why free code rather than proprietary/expensive?
            1. Who is we? Divide between those who have the resources to produce free code and those who don't.
            2. Why do we care? Get something that will work, or quasi-religious conviction to openness, law school
            (?) desire not to be hypocritical
            3. Openness as means or goal?
            4. What parts of openness are important?

Concluding Session: Building an Agenda, moderated by Larry Lessig

I. Eric Eldred
    A. Scanning books for online display is "easy" - helping to make a "free and global public library"
    B. Try to make documents helpful - proofread, provide discussion areas, etc.
    C. Shut down site after copyright extension act
    D. Worried that all Internet content will be controlled by a few powers. "Media giants want to turn the Internet into Pay TV."
    E. Currently software source code need not be placed in Library of Congress in order to get copyright protection - unfortunate because, after copyright expires, *still* no access to source code.

II. Jamie Boyle, Yochai Benkler, Jim Fishkin, Danny Weitzner

    A. Jamie Boyle:
        1. Computers and the Net bring two sides of patent into collision. You can't patent algorithms, natural laws, but through the machine embodiment. Open code is at the hinge.
        2. Rhetoric. The public domain needs a public explanation. Look at the invention of "the environment." Create a concept that gives people a common interest.? The duck hunter and bird watcher both need the swampland preserved.
            o How do you make people see common interests?
            o Connect it to public values, such as the schools
            o Show the extreme examples to work back to the core
            o IP externalities, like pollution
            o Ecology: show the unexpected reciprocal effects
        3. It's not impossible to affect public policy.
        4. We need a set of factoids, connecting these ideas to everyday life - the tip calculator patent. Stupid patents.
        5. What can we do? ? Grease the wheels of private action.
            o Prior art database, decentralized aggregate of knowledge
            o Use open code in support of open values

    B. Yochai Benkler
        1. Open code as a rhetorical vehicle, symbolic of a larger point
        2. Resistance to theory of the commons, public domain? Elite resistance: Need to work out the economics- inefficiencies of private ownership, Political theory
            o Institutional. Congress, Judiciary - First Amendment
            o Organizational. If universities think of themselves as businesses, they propertize information. They should instead act for the freeing of information.
            o Cultural notion of "it's mine, I made it." Think about information in terms of relationships, not creation and ownership.

    C. Jim Fishkin
        1. Democracy. What type of conversation will fill the commons?? Pseudo democracy v. deliberative democracy
            o Internet brings to life the SLOP (self-selected listener opinion poll) - purport to represent the public, but astroturf, not grassroots.
            o Pseudo-democracy characterized by phantom opinions
            o Public opinion, public spaces - both need a public.
        2. Deliberative Poll
            o Invite random sample of the public to come together for issue discussion, then ask for opinions.
            o Thus far, face-to-face.
            o Could we create real deliberation online?
            o Deliberative Council for ICANN membership?
            o Prototype, with international random sample
            o Internet offers prospect for engaging the public more directly

    D. Danny Weitzner
        1. End the image of computer programmers/ hackers/coders as priesthood. Put issues in terms people can understand.
        2. Code architecture is such a fundamental aspect of our lives that we cannot allow it to be controlled by patent.

The Cathedral and the Bazaar,
> by Eric Raymond.
> http://www.tuxedo.org/~esr/writings/cathedral-bazaar/
> One of the groundbreaking articles in the OSS movement, "The Cathedral and the Bazaar" analyzes "how and why the Linux development model works."

The Magic Cauldron
> by Eric Raymond.
> http://www.tuxedo.org/~esr/writings/magic-cauldron/
> This paper analyzes the evolving economic substrate of the open-source phenomenon. In this essay, Raymond presents eight models for sustainable funding of open-source development.

Opensource.org
> http://www.opensource.org/
> A collection of resources on the OSS movement: what it is, and why you should care.

Commercializing Open Source Software,
> by Paul Johnson.
> http://www.treetop.demon.co.uk/coss.html
> An essay proposing to combine the "best" of the open and closed source models.

Freeware,
> by Nikki Goth Itoi.
> http://www.redherring.com/mag/issue63/news-freeware.html
> Article arguing that, while open source has an important place in the commercial arena, its effect on the competitive landscape will be minimal. From *Red Herring Magazine*, February 1999.

Core Competencies: Why Open Source Is The Optimum Economic Paradigm for Software,
> by Dan Kaminsky.
> http://doxpara.netpedia.net/core.html
> Article attempting explaining the success of OSS in economic terms. Describes the "barter economy" which has grown up around the OSS movement, in which all participants gain the benefit of "a much more capable and higher-quality product than they could afford to develop on their own . . . which has been carefully enhanced to meet their exact needs," and explains why Source Licenses lead to economic inefficiencies.

Philosophy of the GNU Project
> http://www.fsf.org/philosophy/philosophy.html
> A discussion about the philosophy behind free software and the Free Software Foundation.

The Open Source Revolution,
> by Tim O'Reilly, with an introduction by Esther Dyson.
> http://www.edventure.com/release1/1198.html
> Article from Release 1.0, November 1998 edition. Written in the wake of the Microsoft *Halloween* Document, this article explains what OSS is, and how companies can take advantage of it.

Open Code and Open Society: Values of Internet Governance,
> by Larry Lessig
> http://cyber.law.harvard.edu/works/lessig/kent.pdf

Commons and Code,
> by Larry Lessig
> http://cyber.law.harvard.edu/works/lessig/fordham.pdf

Open Sourcery,
> by Josh McHugh.
> http://www.forbes.com/Forbes/99/0503/6309054a.htm
> Article in *Forbes* magazine explaining why the move to open source might be difficult for large software firms,
> arguing that the nature of open source clashes with the needs of corporate America.

The Free Software Story
> http://www.salon.com/tech/special/opensource/
> *Salon.com*'s collection of articles on Linux and the free software movement.

Software in the Public Interest, Inc.
> http://www.spi-inc.org/
> A nonprofit organization "founded to help organizations develop and distribute open
> hardware and software."

Freepatents.org
> http://www.freepatents.org/
> Website dedicated to the protection of innovation, competition and open source software against the use and
> abuse of software patents.

Liberation Technology
> with Introduction by Austin Bunn
> http://www.feedmag.com/oss/ossintro.html
> FEEDmag.com's collection of articles and links on open source software and free software.

Assessment in WWW-Based Learning Systems: Opportunities and Challenges
> by Mary Hopper
> http://www.iicm.edu/jucs_4_4/assessment_in_www_based/
> This paper argues that an open source architecture is the best means to ensure the reliable
> integration of learning assessment tools in WWW-based pedagogical software.

Center for Responsive Politics
> http://www.opensecrets.org/news/index.htm
> An excellent source for data on money in politics. Find out who gave how much to whom and when. This site is
> listed in response to the session attendees who expressed a specific interest in campaign finance reform.

"Anarchism Triumphant: Free Software and the Death of Copyright"
        by Eben Moglen
        http://old.law.columbia.edu/my_pubs/anarchism.html
        An essay that suggests the vastly differing regulatory strictures, (e.g. copyright, patent, trade secret, etc.)
        imposed on similar objects (bitstreams) will tend to break down over time due to their own unwieldiness.

freshmeat.net - http://freshmeat.net/
        Daily postings of open-source, public domain, and GPLed software.

slashdot.org - http://slashdot.org/
        discussions, links, and editorials of interest to free software developers.

Thanks to those who contributed links and suggestions to this list.