# The Free State Foundation

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# Delivering Media Content in a New Technological Environment: An Exploration of Policy Implications

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## Transcript of the Proceedings

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**P R O C E E D I N G S***

**MR. MAY:** I am Randy May, president of the Free State Foundation, and I want to welcome you to this seminar. Before I introduce today's program, I want to say that we're really pleased to be here at the National Academy of Public Administration. This is the first Free State Foundation program that we've done here, and it's a pleasure to be here.

The title of today's program is, "Delivering Media Content in a New Technological Environment: An Exploration of Policy Implications." I will say just a bit more about the substance of today's program and introduce our speakers in a moment. But first I wanted to put today's seminar in the context of the Free State Foundation's overall new direction in communications policy project.

This is part of the Foundation's "New Directions in Communications Policy" project. And the purpose of the project is to formulate a set of forward-looking policy proposals for consideration by the next administration and Congress.

Members of the Foundation's prestigious Board of

* This transcript has been edited only for purposes of correcting obvious syntax, grammar, and punctuation errors, and eliminating redundancy. None of the meaning was changed in doing so.

Academic Advisors are contributing to a book of essays, titled “New Directions in Communications Policy,” that will address the most significant communications policy issues facing the country today. The topics range, of course, from the one that we're going to talk about today to universal service and inter-carrier compensation reform to net neutrality, spectrum reform, and FCC institutional reform.

When we release the book in early 2009, FSF will hold a major conference to feature the essays' authors, public policy makers like Commissioner McDowell, hopefully, and other experts to discuss the recommendations for these new directions.

In addition to the conference, as part of the project, the Foundation is holding a series of seminars during the fall of 2008 featuring members of the academic board, like Steven Wildman, who are authoring the essays that will be in the book. Today's event is part of that series.

The next program will be on October 24th. That will be held up on the Hill, and that program will look at universal service and inter-carrier compensation reform. The two featured speakers are John Mayo from Georgetown University's business school, and Professor Jerry Brock

from George Washington University. Jerry is here with us today. It happens that that program will take place about a week or so before the FCC considers those issues. So that should be a very timely seminar.

As for today's topic, it's obvious to everyone without belaboring the point that media content is now delivered over a variety of platforms and in ways that did not exist back when the three major networks dominated content delivery, say 20, 30 years ago. We now have cable systems, satellites, fiber optic platforms, mobile phones, and the internet. And we basically have the integration of the computers and transmission systems that we first started envisioning and talking about back in the computer inquiries, you know, 20 or 30 years ago. I think that has come to pass.

But in many ways, the new content delivery platforms and the new teachings are still saddled with legacy regulations. Even if they're not, there are proposals to saddle these new teachings and new delivery platforms with legacy regulations, ones that were first put in place 20 or 30 years ago.

So I've argued, as many of you in this room know, many times, and I'm going to do so again in a new law review article that will be published in a couple weeks,

that many of these legacy regulations applied to today's content delivery mechanisms are either unconstitutional or at least raise serious constitutional concerns in terms of their infringement on First Amendment rights. And there are also, frankly, some Fifth Amendment issues, I think, that are also worth looking at.

But putting aside these constitutional issues, the new technological environment has important implications from a pure policy perspective. And this is especially true when one considers how the altered technological environment impacts the economics of the marketplace. And I think today's program is going to focus on these policy implications from the new technological environment.

I'm going to introduce our two speakers together, and then we'll hear their presentations. Following their presentations, we're going to have an interactive discussion among them and myself and hopefully you as well.

First we're going to hear from Professor Steven Wildman. Professor Wildman is the James H. Quello Chair of Telecommunications Studies and Co-Director of the Quello Center for Telecommunication Management and Law at Michigan State University. This center is named after Jim Quello, who I believe was the longest-serving FCC Commissioner to

date and a former chair of the FCC.

Professor Wildman has also taught at Northwestern University and at UCLA. He's the co-author or co-editor of five books, including most pertinently for today, "Video Economics." He's written numerous articles on economics and policy for the communications industries. He holds a PhD and an M.A. in economics from Stanford University.

Professor Wildman is going to be followed by FCC Commissioner Robert McDowell. Commissioner McDowell was nominated by President George W. Bush to his seat on the FCC, and was unanimously confirmed by the U.S. Senate in May of 2006. That might have been the last unanimous action that the Senate took, possibly. But I can understand why that would have been unanimous.

Before assuming his position on the Commission, Rob served as senior vice president and assistant general counsel for COMPTEL, the association representing the competitive facilities-based telecommunications service and telecommunications industry.

Now, as I said, I could go on and on. Rob has many other distinctions. But I want to get to maybe the most important thing in Rob's resume, and that is that he graduated cum laude from Duke University. Now, for those of you who know me, I'm a Duke graduate as well, so that's

very important. And after Duke, Rob went on to graduate from the law school at William and Mary.

So with those introductions, we're going to start our program with Steve Wildman.

**PROFESSOR WILDMAN:** Thank you, Randy, for the opportunity to be here to share my evolving thoughts on the evolution of video and media regulation.

As Randy said, this is basically an outline for what will be a chapter I'm writing for the book that he will be editing. And because it's an outline, things can change in response to your questions and comments today, hopefully not dramatically.

First, I want to look at the history of video regulation very briefly and the basic assumptions that underlie those regulations. Then I will discuss how a transition to a new architecture that relies upon video servers for the collection and distribution of input gives rise to a very different economic logic. And as a response to the changing economic characteristics of an industry, we would expect the regulatory environment to change as well.

The traditional U.S. media system focuses primarily on broadcasting. We've thought of broadcast content, whether cable, television, or radio, as being delivered using spectrum which is scarce and costly.

Because either the spectrum is costly (in the case of cable, satellite, or their new telco competitors) or scarce by regulatory design (in the case of spectrum allocated for broadcasting), we end up with more content than could possibly be allocated and delivered to consumers. And in that case, channel operators act as gatekeepers in determining what content is actually made available.

We explore the economic consequences, as Randy said, in *Video Economics*. That book was published in 1992, and so that's really the economics of the old industry. And hopefully there will be a new *Video Economics* that discusses the economics of the emerging industry.

But there are strong incentives, then, for operators to pick content that appeals to fairly large audiences or audiences that are willing to pay a lot. And usually those go together to some extent.

People whose content preferences match those of a large group of people will get more content and more expensive content matching their preferences. Conversely, people with idiosyncratic preferences will receive relatively inexpensive and fewer program selections.

Geographic reach can be translated into competitive advantages for content suppliers. We've seen this in terms of UHF versus VHF in the old broadcast days

before we had cable retransmission. In addition, having a large footprint is an advantage in negotiations between cable operators and program suppliers.

As a result, there is the concern that control over access to popular content may be used to disadvantage competitive entrants. Where these concerns were manifest is the old financial interest and syndication rules that limited the ability of broadcasters to control the content. The issue was whether broadcasters owned syndication rights.

The same set of concerns arises when we get to the issue of whether vertically integrated cable networks should be made available to cable competitors. These problems are theoretically possible. Whether it's empirically proven or not is another question, but it's a valid policy concern.

The policy concern that arose from this whole environment, which is still much of the current environment, is that because we have commercially motivated gatekeepers, important political and social content is under-supplied due to its positive consumption externalities. In other words, we believe that the benefits accrue to society at large, and individual consumers don't internalize those benefits. Therefore,

consumers do not consider those benefits when making payment decisions, and commercially motivated operators will under-supply what we think should be supplied in greater content.

Similarly, content with negative consumption externalities may be over-supplied and over-consumed. This gives rise to regulation restricting access to what's perceived to be offensive programming at certain times of the day, particularly by the broadcast networks.

Content that appeals to small audiences will be under-supplied relative to even its economically efficient levels. This just comes from basic economics, the old Steiner models that advertiser support gives rise to the division of the larger audiences. But even with pay services, you still have these same economic tendencies.

Incumbents can use -- as I mentioned before -- control over popular content to disadvantage rivals by denying them access to it. This is a bundling issue. Again, theoretically it's ambiguous, but it's a legitimate empirical concern.

There is also the concern that concentrated facilities ownership will lead to inadequate and biased selection of viewpoints. This is the subject of our seemingly never-ending proceedings both in Congress and at

the FCC over how to manage the ownership of broadcast facilities, both how many local channels one entity can own as well as how much national reach one entity can have. These concerns apply to cable as well.

And so the policy responses -- I've already mentioned a bunch of these -- are either behavioral or structural. In both cases, we can mandate that an operator do something it otherwise wouldn't do, or at least that we believe it otherwise wouldn't do. A few examples include: the prime time access rule which mandates an operator offer programming from independent suppliers, the fairness doctrine, public interest programming expectations, family-friendly viewing hours, and so on and so forth. Those are behavioral requirements.

But we also get involved in structural manipulation of industries, believing the basic structure and conduct performance model of antitrust. If we can manipulate structure, we can manipulate incentives, and by changing those incentives get a more desirable outcome.

But that's really been the regulatory regime up to this point. And it's based upon the critical assumptions that the supply of content to consumers is limited by the capacity of the physical distribution system; that a small number of owners, because there are a

small number of facilities, really control the available distribution facilities and make critical choices that have larger social consequences; and that we can address these problems, or perceived problems, by manipulating either behavioral requirements or structural conditions for the industry.

As Randy mentioned as part of the introduction, we're now in the process of transitioning to a video delivery system or a content delivery system that is largely based upon network servers. The servers may exist somewhere on the Internet, or they may be more local, such as how cable systems and the telephone companies are providing IPTV services.

We can see this in a number of trends. One, it's hard to find a television program now that you can't find available on the web. The most recent episode of anything that has any degree of popularity -- in fact, even most that don't - can be found within a day of its television delivery. You can find past episodes going back months or years. You can find stuff that's been off the air for decades. It's all going to be there.

Internet-delivered video is a rapidly growing industry, and we're seeing the internet follow what we saw with cable many years ago. For perhaps the first two

decades of cable, even through most of the 1980s, all the programming is what used to be on broadcast channels and just being sent back to us again as syndicated program. Cable has become an original source of original programming, and the internet is taking that same path, originally repurposing what was already there but very quickly -- in fact, more quickly than cable did -- emerging as an important source of new and original content.

We can see this in the short form with services like YouTube, but in the long form, which means normal program-length services, like Hulu and Joost. And we're seeing this spread all over the web. Websites like MySpace, YouTube, and Facebook are also offering what they call channels for the presentation of traditional broadcast or cable networks programming.

We're seeing services such as Apple's ITV, and Microsoft has a similar system, that will allow you to redirect a video stream from your PC to your TV so you can watch it on a normal screen. Manufacturers are creating internet-ready television sets so that the broadband is on the back of the set; you can watch television or the web interchangeably or simultaneously through small windows on your screen.

The cable companies and the telephone companies,

with their competing IPTV services, are offering on-demand programming, which is again a server-based presentation of video.

So I'm going to show you a couple of diagrams just to illustrate the difference. This diagram could represent cable or a satellite system, as it traditionally has been. There are a lot of program suppliers, and the networks and producers are delivering content to a cable system's head end or to the satellite for a satellite service. Then all that content is sent downstream as a set of parallel channels that are collected at a set-top box or a dish on top of a household. And all those channels are there simultaneously.

The viewer then uses a set-top box and the TV to select among the channels that are already there. If you want to add more content, you have to add more channels. And that constrains the amount of content that's going to flow through the system.

In contrast, if you look at a pure IPTV system, which is not what we really have today but I'll get back to that in a moment, you'd have the program suppliers providing content that sits in a video storage facility. There's a single channel or a two-way channel that goes from the set-top box to the storage facility, and you

redirect that channel by switching at the storage facility and selecting content among what is there.

So what's the important difference? Well, for traditional multi-channel video distributors (MVPD services) to add more content, they must add more channels. That's costly. It constrains what's out there and gives rise to the selection of content based on how many viewers want to watch it.

The real constraint with IPTV is expanding server capacity. You've got one channel already there, and you're just redirecting it. There are issues about how you combine signals of large numbers of people, but as shown with YouTube, there are strong incentives to add more content.

The real content constraint on the system is the cost at the margin of adding more server capacity. That cost is low or we wouldn’t see YouTube having a reputed 200 million videos right now.

So what are the implications? We could potentially have massively more content available, certainly more unique programs. For example, people can upload something they've videoed from a cell phone.

Older programs stick around forever. And this is an important consequence: There really are no channels to

fill. According to the trades, people going online to select content is called non-linear channels or non-linear programming. Things are not occurring in sequence.

Evidently, what we call filled channels of programming are a consequence of the economic constraints of the old system. You've got that channel. It's going to be there anyway. You've got to fill it. Otherwise there's a potential lost audience. When you take away the channel capacity constraint, suddenly the need to engage in programming in the linear sense as we traditionally think of it goes away.

And further, there is the concept of web bypass. People increasingly go to the same websites and construct their own programming schedules. Recent trade studies suggest that 20 percent of all people who have broadband access at home are using it to watch video that would otherwise be available on television. And of those, 25 percent download it, 75 percent stream it. And so you're getting to an asynchronous viewing environment.

This is the situation today. We have the traditional cable system sitting in the middle where all the traditional channels are still being streamed to consumers. They head in, and they're passed on down to the TV set.

But at the same time, there are video storage facilities that are being created by the cable operator or the telco, and they enable you to select programming on demand. And increasingly, more and more content is being made available on demand, while at the same time you can use your broadband connection to find programming on the web.

In my view, this is very much a transitional phase. We're still used to thinking of things in terms of linear channels. Most people are still watching those linear channels. It takes time for habits to change and people to realize they can construct their own schedules.

In the long run, I think we're going to find that web-based services that allow people to construct the services they want will be there as repackagers, and that will really be bypassing traditional networks that are based on control of these linear schedules.

And I think where we're really headed in probably the not too distant future, 10 or 15 years, is where everything is server-based and people are simultaneously going through their cable operator or telco and going to the web, and viewing these two things as indistinguishable.

And whether or not that middle part becomes a long-term viable part of the system is another question.

In other words, does your telephone provider or the cable system just exist to provide the broadband access to everything that's sitting out there on the web? Is there any real economic advantage to owning the local server as part of the cable system as opposed to something that might be sitting on a node for a content delivery network like Akamai? It's not obvious that that's the case.

In the environment we're moving towards, we end up with new constraints on policy and policy-makers because the critical gatekeepers are no longer identified with geographically fixed facilities. We're ending up with the YouTubes and the MySpaces, the social networking sites and so forth, as being the places people go to find what they want to watch. And you can't identify them with any given physical location.

Virtually all of our regulation right now is based upon licensing or being able to control the people that control the physical means of access with the belief that those are the critical gatekeepers. And as that gatekeeping function moves online and off physical facilities, the original gatekeepers are used to access something for which the geographic location has really no important point of reference. They lose the leverage of control over the facilities as a means of controlling the

nature of the content provided.

If we're thinking of possible gatekeeper concentration and we're applying this to the online world, is MySpace too important? Is YouTube too important? And so on. And the economic reasons why we may end up with small numbers of sites that have large numbers of users are more based on the social nature of consumption rather than economies of scale and distribution.

We have to ask questions: How can we possibly regulate people that have no important physical location? And if we were going to do so and we started to do that, wouldn't somebody else emerge that was doing the same thing? How can we possibly regulate all of them simultaneously without creating the equivalent of the Chinese system that monitors politically incorrect, from their perspective, content?

It's harder to make favored content more visible. In public access programming for cable channels, for example, we have the concern about localism. My understanding is that there is currently a dispute before the FCC because the telephone companies aren't providing the PEG channels, public educational and government channels, as standard low-end channels the way that the cable companies have in the past.

Telephone companies are saying, we put that content on the server and you can access it. And public interest advocates are saying, well, it's harder to get to and people are less likely to use it.

On the other hand, the tradeoffs or opportunity costs of making one choice over the other have changed dramatically. It used to be one or the other. Now we can have them both. And so in some sense, we're better off, but who gets put on the on-demand version versus who's left there as a streaming channel? Of course, in the long run, that choice probably will go away anyway because everything will be on demand.

It's harder to make disfavored content less accessible. Now, when you can go online -- and if you've had a teenager, you know how they can find anything you don't want them to find -- it's going to be on your computer sooner or later if they're using your internet connection. And that's the environment we're moving to, and it's very difficult to control that.

So it leaves us on uncertain ground on how we go forward from a policy perspective in trying to address traditional concerns. And I'm not offering anything definitive, but I'm offering some recommendations in terms of new ways of looking at things.

Even with the current system, we're at sort of the in-between stage. We have, in parallel, the traditional linear channels along with content accessible on an on-demand basis. We need to recognize the new tradeoffs between making more favored content available and what it costs in terms of displacing something else.

And the displacement cost is now really the cost of adding more server capacity rather than adding a new channel. And those channels, at least in the current environment, are quite valuable. That is, the commercial opportunity cost is big, and it's no longer an all-or-nothing choice. And so we need to think through that.

We need to recognize that scarcity is becoming less and less of a concern. In the long run, I think it will probably go away. Instead, providers will likely focus on the user interface. That is, they are trying to make favored content more visible. Perhaps we should be looking at constraints on device manufacturers. Do you have a button? Or when you pull up what would be the equivalent of a desktop to start your video surfing experience, do you have a button that identifies local content, public interest content, public programming, and so on so it's always there and an obvious choice, as opposed going through multiple layers to find? That might

be one way to think about the new constraints.

I think we may need to think about rules that limit ISPs' discretion in terms of how they filter incoming content. There's a book coming out shortly by a professor at Stanford -- I don't have her name on the top of my head -- who argues that there have been cases where an ISP, I think it was Comcast, filtered out political e-mail distributions that were against positions that Comcast has taken. Whether that's part of the normal spam collection process or not is another question. But that possibility exists. And it's difficult to identify something that doesn't show up, if you didn't know it was coming in the first place.

And so whether or not this is an important concern or not is a behavioral and an empirical question. But it's something to look at, and we could certainly impose rules that mandate against that.

At the same time, we have to be sensitive that there are important issues in network management. And this is part of the debate on net neutrality in terms of how you treat different kinds of content. But I do want to just raise a possibility that if we look at video programming in the past and the industry we had in the past, the access to channels that reached larger audiences or channels that had

quality characteristics -- VHF versus UHF, for example, for television -- gave rise to a competitive advantage. That situation can be recreated by treating different suppliers a bit differentially.

Whether there's an incentive to do so is another question. But theoretically, that possibility arises. And it can even happen if you don't treat them differentially because you can charge everybody for not being the one that's discriminated against. There are situations in which disfavoring some is more profitable than favoring others and selectively granting favored treatment.

So these are issues to be sensitive to. And that pretty much concludes my set of policy observations and recommendations.

**MR. MAY:** Steven, thank you very much. And I know there's a lot there for us to talk about. And the next person to talk about it is Commissioner Robert McDowell.

Now, while he's getting settled in, I want to just add something else about Commissioner McDowell. Since he's been on the Commission, I think that Commissioner McDowell in my view has been extraordinarily thoughtful and contributed much in the way he's approached his duties as a commissioner.

Especially from the perspective of the Free State Foundation, he approaches the questions confronting the Commission generally from a market-oriented disposition that I find very helpful, and on top of that, one that's sensitive to constitutional issues and constraints and rule of law principles.

So from my perspective, and this is a matter of my personal privilege, I think those are very important things I wanted to say. And we're very happy to have you here today, Rob, to give us your views on these issues.

**COMMISSIONER MCDOWELL:** Thank you very much, Randy, for those very generous remarks. And I want to thank Professor Wildman for giving most of my presentation, so thank you. That actually helps our audience. You did a fantastic job there.

I'm very, very optimistic about the future of America and the future of communications technologies. I think for American consumers and world consumers, we are just now starting to enter what I'm calling the golden age of wireless communications.

Before we go off completely talking about just wireless, I think one of the many things this Commission will be known for, I hope, on the positive side will be that in the past four years or so especially, we've been

able to open up new opportunities for the construction of new delivery platforms. When those opportunities exist, I think that starts to take care of a lot of these public policy debates that we have out there, such as net neutrality or other content control issues.

And to reiterate some of the things that we've done, and I see different familiar faces in the crowd so some of you will agree with some of this and disagree with others, but I think the net result is it's very, very positive for competition and for consumers.

In December of '06, we voted out on a 3-2 vote the video franchising order, which makes it easier for fiber to be deployed. If you're offering competitive video services, it makes it easier to do that. And that survived an appeal to the Sixth Circuit, thankfully.

And I wanted to make sure that applied to incumbent operators as well, the video services, so that we have as much regulatory parity as possible. But there's no substitute for fiber -- except when we talk about wireless here in a little bit, and I think that is ultimately going to be good for American consumers.

I'm not going in chronological order, but in the wake of the Brand X decision in June of '05, the Commission has been busy putting broadband services into the less

regulated Title 1 bucket so that all broadband platforms are treated equally, whether it's wireless broadband or DSL or cable, or it's the subject of Brand X, or broadband over power lines, wireless, et cetera.

And concurrent with that -- and skeptics will say this is a coincidence, and I don't think that it is; I think it's cause and effect -- concurrent with that, we have seen our domestic broadband penetration rates increase significantly, from 20 percent a year to 30 percent per year increases, 40 percent at the last snapshot, to roughly 60 percent increase in broadband penetration rates per year.

That's phenomenal. When we hear about the U.S. falling behind in broadband -- and I'm happy to have a debate on some of that -- we have to keep this in mind, that we are accelerating. And the fast lanes are getting faster, and the lane that has the most rapid rise of penetration is wireless. At one point it was increasing at 5000 percent per year. Obviously, it can't sustain that kind of growth. But it will continue to be the most exciting area, I think.

We have in other contexts also been opening up new windows of opportunity. We obviously have been auctioning off some spectrum. So August of '06, we had our

AWS1 auction, which was very, very successful. It was the most successful auction in FCC history until the 700 megahertz auction, in terms of dollars raised, anyway.

Obviously, the 700 megahertz band is important. We are considering what to do about use of the TV white spaces, which we can talk about more when we go into the interactive portion of this. But there's some beautiful, delicious spectrum in the white spaces as well. I'm confident and optimistic that someday -- we hopefully have an engineering report coming out soon which I have not seen -- we will have use of those spaces without harmful interference to incumbent licensees.

Technology, the history of technology, shows that's the direction wireless is going in. And those technology improvements will happen, and then we can discuss the licensed versus unlicensed, et cetera. But that improvement is going to be a tremendous boon to the economy.

I have a couple of other fun facts. In just about 26 years since its invention, there are probably now about 3.7 billion cell phones in the world, on a planet with about 6.6 or 6.7 billion people, so more than one cell phone for every two people on the planet. I think if you'd asked the inventors of the cell phone 26 years ago how many

folks would own a cell phone at this stage, their answer would be in the millions worldwide. But no one could have guessed at that time just how wonderfully, phenomenally successful that invention would be.

We can talk more about this at some other point, but I think mobile wireless devices are actually promoting democracy. These weren't just inventions that were the product of liberal democrat capitalist societies -- liberal and democrat, small L, small D -- capitalist societies, but now the devices are actually causing them. And more information is being disseminated to more people more quickly than ever before as a result.

And I think it's a wonderful thing to help raise the human condition higher than what it is today. Subsistence farmers by ownership of a cell phone are able to find a market for their crops, or clean water or medicine for their families when they were not able to do so before. And that trend should continue.

The world of wireless is probably so exciting to me because I spent so many years in the wireline industry. Wireline is exciting, too, but wireless is sort of synonymous with freedom. Also, the technological advances there, as with wireline in computing, have been just phenomenal.

Our spectral efficiency -- some of you have heard me say this before -- doubles every two and a half years. Since Marconi's first radio transmission of the late 1800s, we are one trillion times more spectrally efficient. That trend should continue forever, at least for our lifetimes, but I think beyond our grandchildren's grandchildren's lifetimes.

To combine that force with the advances in software, defined radio, cognitive radio, and things of that nature means we can't even fathom today the throughput over wireless. And this will affect all areas of our lives, whether medical devices, commerce, defense, or you name it. And I find that very, very exciting.

At the same time, obviously, internet usage is increasing. As the professor pointed out, one little factoid is that YouTube, that one website alone, consumes more bandwidth than the entire internet did in the year 2000. That's just jaw-dropping when you think about it, and that's how quickly internet usage is increasing.

ComScore -- a ratings-type agency for the Internet -- reports that in the United States alone, there are 13 billion online video downloads each month. And that number is increasing. And as the professor pointed out, more and more of that is full-length episodic TV shows or

movies, and not just the Mentos in the Pepsi bottle video that we all watched when YouTube was new.

So I think we're entering an era where consumers are pulling their desired content when and where they want to. They will have more delivery platforms available to them in each market, hopefully by a variety of competitors, which will eliminate a lot of the concerns that lead to calls for net neutrality regulation and such.

I don't necessarily agree, but I can understand the fear that with a seeming duopoly between DSL and cable modem, that there are two corporations that can control what you see on the Internet. And the best antidote to that is to have more competing platforms owned by more folks.

Of course, I wish our 700 megahertz auction had gone a little bit differently. I had a partial dissent in that because the encumbrance on the C Block I think drove larger, more deep-pocketed players down into the smaller blocks and the smaller geographic sizes. That drove up the price, and drove out smaller players. That prevented a situation where you could have had not only the third pipe, but a fourth, fifth, or sixth pipe by a small-town entrepreneur or some regional player that might not normally own a pipe.

What happened was Verizon, God bless them, got the C Block for 77 cents per megahertz per pop. And down in the A and B Blocks, those went for triple that or quadruple that because larger players were scared away by those encumbrances on the C Block. There are some estimates that by 2016, the value of combined mobile, wireless, voice, and broadband productivity gains to the U.S. economy will be $427 billion per year. And that exceeds today's motor vehicle, manufacturing, and pharmaceutical industries combined. And over the next ten years, productivity gains will generate almost $860 billion in additional GDP.

**MR. MAY:** We want to have a vigorous discussion with no holds barred. And maybe I can just get started by asking a question. And if we need it, we have a mike over there.

I would start this way. If I understood the import of Steve's presentation from a technological business point of view, he's saying -- and I think we can see this when we observe what's happening in the market -- that “channels” as we know them may be going by the wayside -- the Home & Garden Channel and the Weather Channel and so forth. I think that's one thing that Steve is saying. Concomitant with that, or maybe leading to that, is a

diminishment or elimination of capacity constraints because of the integration of computer processing power, if we can call it that, with the transmission systems.

At the same time, we have the traditional rules in place, such as the PEG rules that apply to cable systems. It seems to me that the elimination of the capacity constraints and "channels" would logically lead one to say that those regulations don't make sense. Am I right about that?

**PROFESSOR WILDMAN:** Sure. It's important to qualify my response by saying that the environment I was talking about is one that applies to people who are broadband subscribers. And I think it won't be very long before we will have close to universal broadband subscription because to watch the TV you want, you're going to have to get broadband as well. It'll be part of the package.

And in that environment, we have de facto a la carte already because people go out and pick what they want. They can put together the channels they want. Furthermore, I think if you subscribe to online business or trade publications dealing with the video industry, telecommunications, or land line advertising, you will notice -- and these are RSS feeds -- that people are

aggregating content from other suppliers. So if I'm interested in online advertising, I may find that three or four different of these feeds will include an article from the New York Times, the Washington Post, the Wall Street Journal, or IAH.

The content is being made available. People then come along and package it, and they offer new packages to selected groups of readers that, in this case, they think might want to see it.

I think exactly the same thing will happen when we have online distribution of video. That is, things will be packaged, but they'll be offered in innumerable bunches of packages by entrepreneurs who think they can identify sets of specific tastes.

So, in addition to being able to identify what you want, there will be intermediaries trying to anticipate what you want. And if you look at the way that video gets distributed right now (CBS programs, for example, are available, I was told at one point, from 200 different online sites), the incentive is not to be exclusive. People are out there looking at doing a variety of different things according to particular tastes, to place things where people are likely to see it as they go by.

And the notion that we have to have a la carte to

give people more choice sort of disappears. You've got a de facto a la carte, and you've also got intermediaries, or you will, who will be doing everything you want anyway. And so I think in the long-term, that question disappears.

Now, I'm on record already for saying I think a la carte as it was proposed was a really bad idea. I believe the proposals fly in the face of a lot of solid economics -- the economics of bundling and so forth. But independent of those concerns, I think that's a concern that will vanish.

PEG channels are a different matter. There are two issues. One is getting content out there, making it available. And the debate in the past has always been couched in terms of making sure that people with dissident or minority voices had a chance to be heard.

Now, when you look at a telco or a cable company putting the PEG channels on the server, right, suddenly the debate is changed. The question is not a matter of having it available any more because availability used to mean implicitly both availability and visibility. The argument now becomes, well, it's available, but it's not as visible.

The opportunity cost is greater because now we don't have to make a choice between a PEG channel or a commercial channel that people want. We can have both sets

of content. So there's more reason to have both. But we need to think about new ways, then, of achieving the visibility goal in addition to the availability goal. And that's where we need to focus.

**MR. MAY:** Rob, maybe you can just pick up and react to anything that Professor Wildman said.

**COMMISSIONER MCDOWELL:** Actually, I agree. We live in a market-driven a la carte world right now. The interesting thing for programmers and cable operators will be how to react to that. And yes, cable prices have been increasing, not necessarily far beyond inflation, or if you look at the per-channel basis, we can slice and dice all these numbers many ways. But some content has been increasing in cost.

But I'm not sure that trend continues forever. In fact, it's becoming harder and harder to monetize the production of content, for a number of reasons. You can pull it off the web with DVRs such as TiVo. You can speed through commercials, so the notion of ad-supported episodes or content is changing. So how do you pay for this? The era of $6 million an episode to produce *Friends* could be coming to an end.

But I think we'll enter a world where there are three types of content. There's going to be free, there's

going to be cheap, and there's going to be good. And people are going to have to pay a premium for the good content, and they'll get a kick out of the free and the cheap at times.

But every production company, programmer, that I talk to is trying to figure out how this new economic model is going to work. How do they monetize their product in this new world? Nobody really knows. So it's exciting and fearful all at the same time.

But something will happen. There will continue to be content, and there will continue to be high-quality content. And there'll probably be lots and lots of free low-quality content. It could even be harmful content. It could be lots of things.

But that de facto a la carte world that you were referring to, I think we're in it right now. So I think the idea of a government-mandated a la carte world is sort of fighting the last war. We're already in a new world.

**MR. MAY:** I want to open it up to the audience. Cheryl?

**MS. BOLEN:** Thank you. So given all the pervasiveness, and I used that word specifically, of all the content that's out there on the multiple platforms, how does the FCC defend indecency regulation?

**COMMISSIONER MCDOWELL:** I'll take a first whack at it. First of all, because it's not just a good idea but it's the law. Congress has told us we need to do this. I think my second week on the job in June of '06, I was invited to the bill-signing ceremony with the President at the White House where he signed into law increasing the fines tenfold, and this was passed overwhelmingly with a very large vote, both houses of Congress, Republicans and Democrats.

So the directly elected representatives of the people have said the broadcast airwaves must be as wholesome as possible during the time they are supposed to be wholesome. So that's number one. I think there's still an expectation that if you're using the public resource of the airwaves for free, that part of the quid pro quo is you have to abide by these rules.

I think the good news, however, for parents, and I'm the father of three young children, is that as we move into this de facto a la carte world, consumers are more empowered now than ever to pull what they want when they want. Parents have more tools at their disposal than ever before to shield their kids from harmful content.

At the same time, as Randy pointed out earlier, our kids are smarter than we are and are finding ways

around that. But there's going to be a push and pull and a tug there for quite some time to try to figure out how to stay ahead of your kids.

And this is on top of, of course, parents being the first and last line of responsibility. In the McDowell household, we don't allow TV to be watched on school nights. The computer is in one central location where we can see them and what they're doing. And they can't use the computer on a school night unless it's for school purposes. And we try to watch what they do.

Now, maybe most households aren't like that. But I would hope they would be. At some point, the government needs to let parents be parents. But I do think there are more tools out there for parents than ever before, and I think that's terrific news.

Also, how does the broadcast industry evolve? Will it become more interactive? Broadcasters have wonderful spectrum. Technology will allow for more and more to be done with it. And the broadcast world of my kids might be completely different from what we think of it today. And maybe I'll leave it at that.

**MR. MAY:** Did you want to add anything?

**PROFESSOR WILDMAN:** I have nothing really to add.

**MR. MAY:** Ted, next question.

**MR. GOTSCH:** Ted Gotsch with *Telecommunications Reports*. My question is directed to you, Commissioner McDowell. Given some of the views outlined by Professor Wildman of the future development of broadcast, cable, and IPTV and the disintegration of the channel model down the road, when do you see the horizon on this forcing a change that the FCC will have to weigh in on?

Obviously, these things don't happen overnight. There's going to be some point where we still have people getting regular cable, regular video through the telco or through satellite or what have you. And we already have many younger folks who don't even watch "regular" television any more and get all their programming off the computer. Do you have a sense what the tipping point will be? What will finally push the need for the FCC to weigh in on this?

**COMMISSIONER MCDOWELL:** The kind of sarcastic answer would be when Congress tells us to. But there's a lot of truth in that. I mean, the current statutory regime is set up in a certain way, and so broadcasters are treated differently from folks on the Internet. So that's part of it. It won't be just the FCC, it'll have to be Congress reforming the statutes.

But you're absolutely right. As the end of the

last answer was implying, broadcasting is going to change. My kids don't understand the difference between CBS and ESPN. They don't understand, you know, that there's a TV station that's different from all those cable channels they see or websites. So does the constitution see them differently? It's very exciting.

**MR. MAY:** Jerry?

**MR. BROCK:** I'm Jerry Brock from George Washington University. The vision you presented of an interconnected system that we get our videos from everywhere certainly has much to commend it. I think it clearly appears to be where things are going.

But it seems like within that vision, at least as we currently perceive it, we have a very large number of content providers, especially all the people uploading on YouTube. However, we still have a fairly limited number of actual physical facilities providers.

You alluded to the fact that having two broadband providers is doing well, and not everybody has that. And at the internet backbone stage after a variety of mergers and so forth, we certainly have competition, but we do not have a large number of carriers in relationship to traditional broadcast terms.

And my question is: Have you thought about or do

you see any dangers of many of the same old issues related to broadcast coming up in the new environment, that it will just take a little bit of time to figure out how to control that content and gain monopoly power and exclude the smaller carriers and things like that? Or do you think that the structure of it automatically makes it free from those concerns?

**PROFESSOR WILDMAN:** Yes. It's taking me considerably beyond what I said, but that's why we have Q&A. And where I see the issue is not so much a matter of trying to exclude smaller carriers, but when it comes to having a broadband access provider that also simultaneously has a financial interest in the programming that's being provided.

I already mentioned the history of having a high-quality VHF channel as a commercial and profit advantage over somebody that had a lower-quality UHF channel. That difference can be recreated by treating the bits from one provider different from another.

And so you can imagine that if you have competition in the supply of online news or online sports or whatever and you have two different providers, and one is getting slightly fuzzier pictures, and you're selling access to this or you're selling access to an audience to

advertisers, then the one that has the better quality service is the one that's going to get the bigger audience or the higher payments.

So the theoretical concerns that have applied in the past -- and this is what we've always been concerned about when we had small numbers of gatekeepers -- would apply here as well. It's an empirical question as to whether or not they become manifest in problems we actually observe.

And so again, as a matter of theory, the issue exists. You'd have to ask questions about whether I'm denying my subscribers access to higher quality video content from somebody else. Then, will that manifest in a disadvantage compared to my competitor who's also offering broadband service? There could only be two of them like we have today.

And it's not obvious to me that for one or two different sources of programming that the difference in quality is enough to cause a switch to a new provider because there are costs associated with switching broadband providers. You need to change your e-mail address, for one thing. It’s fairly costly to recapture and renotify everybody on the old lists. So in the presence of switching costs, I think this remains a valid concern.

**MR. MAY:** In listening to Steve, I made a blog entry on this yesterday or the day before, I remember when AOL and Time Warner merged back in, what, 2000 or 1999? There were competitive concerns of putting together a large cable company, Time Warner, which had transmission facilities, and AOL, the leading internet service provider at the time. And ultimately, with conditions, that merger was approved by the Justice Department and the FCC.

And I think as part of getting that merger through the FCC, the Commission opened a notice of inquiry in 2001, early in 2001, called the Interactive Television Services Proceeding. It asked a number of questions directed towards what competitive concerns were raised by -- and the threat of -- the AOL and Time Warner announcement that they were going to create a new AOL TV service. This notice dealt with the concerns that AOL TV was going to dominate and preclude and make more difficult the creation of other interactive television services. At that time, the FCC said, we're not quite sure what interactive television is. We don't know.

But anyway, it just terminated that proceeding a couple days ago after seven years or so. And it basically said, we're going to keep watching the situation, but we're not sure what the competitive concerns are.

And that leads me to this question: In situations like this, where you see the technology and marketplace changing very quickly and you've got undefined new services, as a matter of regulatory philosophy and perspective, do you approach these issues having in mind the precautionary principle and potential regulatory overreach? Or how do you approach issues like this in terms of your own regulatory philosophy?

**COMMISSIONER MCDOWELL:** An excellent question. I'm very mindful of the law of unintended consequences. I try to start from the premise that the five of us at the FCC cannot possibly replicate the billions of daily decisions that are made in the marketplace each day that comprise the marketplace, and that we should look for market failure and bottlenecks and address them in a narrowly tailored fashion. So that's the premise that I start from.

Going back to the specific example that you cited, like the AOL/Time Warner merger and the seemingly perennial concern with walled gardens, ask AOL today how well the walled garden strategy is going. I think those who are basing their business plan on a walled garden are doomed to fail.

There still may be room for walled gardens in the

marketplace, but they're going to be for premium services of some form or another. And I can't imagine exactly how that might work out in the long run. We've talked about the ability to grab all sorts of content for free, largely, from just about anywhere. But there are going to be some exceptions -- live sports programming, for instance. They're probably going to charge you money for that, and that's going to be hard to get for free.

But this was part of my objection, my partial dissent, in the 700 megahertz order, the open access mandate in particular. I'm all for open access. In fact, I thought at the time the wireless market was headed there already. And actually, it ends up that I was right, that we've seen a lot of these open devices that were in the works for a year or two years before the FCC took that vote.

We have Google and T-Mobile unveiling their phone this week. That was in the works well before the 700 megahertz order with the open access mandate. So what did that tell you? Well, Google at the time knew that they could get their software on a device, and that it would have a WiFi chip, and as soon as mobile devices have WiFi accessibility, you have the entire Internet on your mobile device.

All it takes is a slight crack in one walled garden for all of those walls to come down. It's a matter of time. But there are those who thought that the walls were not coming down fast enough, and therefore the government needed to do something.

Again, we were fighting the last war while technology in the marketplace had bypassed us. These developments were already in a market pipeline and were already coming to market. And we knew it at the time, and I said so in my dissent. So it was unnecessary. And again, in 700 megahertz, it ended up having the unintended consequences of driving smaller players out of that auction, needlessly so.

The proponents of the open access mandate have the best of intentions in mind, I'm sure. And I don't begrudge them that. But what folks fail to see when they're trying to have the best of intentions is who are they harming by doing that? And there's a great deal of harm in the marketplace by that mandate.

So I try to think of what the unintended consequences are going to be of going forward with the regulation, or even deregulating something.

**PROFESSOR WILDMAN:** I personally have no concern whatsoever about walled gardens. I think a walled garden

really flies in the face of the logic of investment in media content.

When AOL was almost everything, or 90 percent, or 75 percent, of the online world, walled gardens may be one issue. But if we think today about ISPs, the fraction of the total U.S. population served by any one of them is pretty small, maybe 25 percent at most.

And then we ask: What's the logic of investment in content? You want to reach the largest audience possible. The larger the audience, the greater are the incentives to invest in content, so you end up with more expensive content reaching larger audiences.

And a walled garden that's specific to any individual ISP, because their geographic reach is small, is almost doomed to have inferior content, unless it's something that's explicitly local.

While I may have concerns about putting up a small fence around a carrot here or a rutabaga there in terms discriminating in that sense on a channel-by-channel basis, I really don't think that economic logic supports the often-voiced concerns about walled gardens.

**MR. DACEY:** My name is Joe Dacey. I'm with State Senator Alex Mooney. I had a question about bandwidth caps.

I know back in the day with AOL, you paid by the hour for dialup access. And then that changed to unlimited internet access. But now it seems like there's a disturbing trend going back to limiting people's access to the content on the internet. I know Comcast now just put in a 250-gigabyte-a-month cap, which seems like a lot now, but with the advent of Hulu, and I know Hulu is going HD in a few months here, that'll quickly be exceeded in the near future. I can foresee that being a problem. And even Time Warner now has a cap of 10 to 15 gigabytes a month.

In other industries, if Ford tried to limit the amount of months I could drive in my car, I could just go out and buy a Honda or something to get around that. But if Comcast wants to limit the number of hours I watch TV or something, I don't have another provider to choose. And it's the same thing with internet.

**MR. MAY:** That's a question that's in the news quite a bit these days, so that's an appropriate one. Will one of you to take that first?

**COMMISSIONER MCDOWELL:** We can tie this back to the Comcast BitTorrent order. We could have a whole afternoon just on this.

Both cable networks and wireless networks are shared networks. You may not know it, but you share

bandwidth with your neighbor. And as such, they have some limitations. New software comes along every now and then, and some forms of peer-to-peer software, consume a large amount of bandwidth. For better or for worse, this is just a fact.

The content that rides on that software can be very popular, sometimes because it's pirated free content. So network operators had to respond at peak times. You had a minority, a tiny minority of users, essentially clogging up the pipes for the majority of their neighbors who don't use that type of software.

So this gets into the network management versus net neutrality discussion of what is discriminatory versus what is anti-competitive. Discrimination, in the vernacular, has a lot of bad connotations. To a network engineer, it means network management.

You don't know it, but your entire Internet experience is managed by engineers in an effort to keep the pipes free and open and flowing. So when you have large chunks of content riding through a drinking straw, that's a challenge for a network engineer

Back to the Comcast-BitTorrent proceeding, and I'm trying to simplify this, the FCC to this day does not know whether Comcast was managing their network or acting

in a discriminatory, anti-competitive discriminatory way. But the FCC ruled that Comcast was violating rules that were called principles that never went through a rulemaking and never were codified in the Code of Federal Regulations.

And without regurgitating my entire dissent because we don't have the time –

**MR. MAY:** But it's worth reading the dissent for the perspective that I mentioned earlier about the rule of law especially and the Constitution. But continue.

**COMMISSIONER MCDOWELL:** We're not sure what the fate of that ruling is going to do. The marketplace responded, in part because of that ruling, to say, well, we're just going to have to put caps. This will not be discriminatory in any context by any reading of the law because we will be treating all players the same.

In other words, if you were a residential subscriber but you wanted commercial-grade bandwidth, the cable company is saying you need to pay for a commercial-grade pipe. I don't know if it's going to work. But this is part of the law of unintended consequences, and it's something I wish the majority of the Commission had thought through before it acted.

Hopefully, as I said in my comments at the beginning, as we have more delivery platforms coming into

the hands of consumers over time, this might be less of an issue. But most of those platforms are wireless, which are shared networks. We have AT&T wireless saying they will just ban outright all PTP applications on their wireless networks because it's congesting their network.

So that avoids this "Are you being anti-competitive or not?" question -- I think that's somewhat exculpatory evidence for Comcast. They also weren't throttling, you know, Joost, which also uses PTP but a more efficient PTP application that doesn't clog the pipes.

So the analogy about Ford saying you can only drive your care so many miles is not quite right, but we'll see where the market goes. Consumers may not like that or they may like that. It depends on the type of application you want to use. But if you want a commercial-grade application, I think the marketplace is telling you that you need to buy a commercial-grade pipe.

**MR. MAY:** Well, that was a pretty good tutorial from an FCC commissioner on an important decision. So I think I'm going to let Steven, if he wants to add to that, do that, and then I think we'll wrap it up.

**PROFESSOR WILDMAN:** I just have a little bit to add. It's important to distinguish between somebody who is using the bandwidth to consume video as opposed to generate

and supply video.

And my understanding is that most of the concern on the part of the commercial providers is that people are basically buying consumer-grade service but using that to offer commercial-grade video uploads. And sure, there are spillovers on every other user, so it makes perfect sense that you're going to regulate that usage in some way.

Another concern that arises, though, is where we have the cable or the telephone company offering its own services and its own video. And on the other side, you have web-delivered competition. Then you might argue that they're trying to discriminate against competitors that are arising on the web by limiting bandwidth coming down to your PC or your TV.

And perhaps there may be short-run incentives to do that. In the long run, I think those will disappear because your competitor will offer that. And furthermore, the program suppliers are all putting their stuff on the web and they're going to be reluctant to offer you the programming if you don't also make web availability.

That would be a concern, but I think that will sort of disappear in the long term.

**MR. MAY:** Okay. Well, with that, I want you to join me in thanking Commissioner McDowell and Professor

Wildman for a stimulating program.

(Applause)

**MR. MAY:** And don't forget to put on your calendars the October 24th event on universal service and inter-carrier compensation. Thanks to you all for coming.

(Whereupon, at 1:41 p.m., the session was concluded.)