

**THE EMERGENCE OF ONLINE VIDEO:
IS IT THE FUTURE?**

HEARING

BEFORE THE

**COMMITTEE ON COMMERCE,
SCIENCE, AND TRANSPORTATION**

UNITED STATES SENATE

ONE HUNDRED TWELFTH CONGRESS

SECOND SESSION

APRIL 24, 2012

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED TWELFTH CONGRESS

SECOND SESSION

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THE EMERGENCE OF ONLINE VIDEO: IS IT THE FUTURE?

TUESDAY, APRIL 24, 2012

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The Committee met, pursuant to notice, at 10:07 a.m. in room SR-253, Russell Senate Office Building, Hon. John D. Rockefeller IV, Chairman of the Committee, presiding.

OPENING STATEMENT OF HON. JOHN D. ROCKEFELLER IV, U.S. SENATOR FROM WEST VIRGINIA

The CHAIRMAN. Good morning, everybody. We have a very distinguished panel this morning, not that we don't always, but this is particularly so, and we welcome you, all of us.

There will be, hopefully, thousands of Senators coming to surround this dais to ask you the most penetrating questions about the impenetrable future.

But, anyway, this hearing is about the emergence of online video and the power of broadband to change the way in which we watch. And who knows what that's going to be 5 or 10 years from now?

This is the start of an exciting and a timely conversation. It's the first hearing that has been held on this subject which is not sort of attacking each other, but looking out into the future and trying to figure out what's coming at us, can we handle it.

Now, why are we doing this? Because television is just an overpowering force in our life. Television, meaning what a lot of people still watch. At its best, it can do more than entertain, it can educate.

But not all television programming is enlightening, nor is it all fit for children's viewing. It's a global age, and I'm concerned the video content that we produce does not represent the best face that America has to the nation.

So my first question is how will this disruptive technology, and when I say that, that's not a negative connotation, that's just the fact that things are changing so fast in such mammothly important ways that it is disruptive, in hopefully a positive sense, but definitively disruptive, is how will the disruptive technology that online viewing will provide lead to better content and to more consumer choice?

But more than content is at issue here, because year in and year out consumers face rate increases for pay television that are rising faster than the rate of inflation. We're paying for so many channels, though we usually only watch a few.

I, for example, have 500 channels, and if I watch, in the course of a month, more than 10, I would be amazed. So why am I paying for 490? I have no idea. Does it give me a warm, fuzzy feeling? Not particularly. But, on the other hand, it's all there if I want to go get it. So who's to know about human nature?

So I want to know if the emergence of online video will do more than improve content and expand choice. I want to know if it's going to bring a halt or a slowdown, at least, to escalating bills.

One other point I want to make. I've said forcefully in the past that too much television programming is crude and a poor reflection of our society. Although this hearing is not focused on that topic, and I want to make it clear, I just also want to make it clear that this is something which I really care about very deeply, as all of my suffering colleagues on this committee know. And I'm going to keep at it until it gets better or until I get to be my great-grandfather's age, whichever comes first.

So, right now, the question is how do we harness this change for power, for consumers, so we can get a higher quality program at lower rates?

But really more important, what's going to happen? What's going to happen? The stats of people who are cutting off landline for telephones can also be—I think I read that in the last month that Nielsen had said that all broadcast news was down in the last month. Now, I guess, if it's down over the course of a year it would be down over the past month, but it sort of grabbed me putting it that succinctly.

To our witnesses, I look forward to your thoughts on this subject and I thank you for joining us today. And I want this to be a lively and forward-looking hearing.

So Senator DeMint is the Ranking Member of the Subcommittee on this subject. Senator Kerry is not here for the moment. And, Senator DeMint, we look forward to your comments.

**STATEMENT OF HON. JIM DEMINT,
U.S. SENATOR FROM SOUTH CAROLINA**

Senator DEMINT. Thank you, Mr. Chairman, and I do thank all the witnesses for being here, and thanks for holding the hearing.

The communications sector continues to be one of the most dynamic and innovative in our economy. And I hope this is just the first of many hearings this year that allow an opportunity to learn about and discuss the marketplace and update the Committee's record.

Mr. Chairman, the obstacles between consumers and the video content they seek continues to disappear. In the video market, tremendous advancements in technology and massive capital investments in distribution networks now empower consumers to craft their own viewing experiences more than ever.

At the root of this increasing consumer power and choice is a complex and overlapping mix of content creators, distributors, and electronics manufacturers racing to serve the marketplace better. A few such companies from this mix are with us today.

With innovation and empowered individuals, however, comes disruption to established models and incumbent powers. Unfortunately, many of our current video laws and policies were sought

and achieved decades ago by established interests seeking government-granted protection from market forces. They were written for a time and a market that no longer exists, and they need to be repealed.

Our video laws simply do not reflect the current realities of the marketplace, and I'm afraid they actually foreclose innovative service offerings and consumer benefits. Our laws should not promote or protect one technology over another or one competitor over another.

Last year, I introduced the Next Generation Television Marketplace Act to comprehensively withdraw government meddling from the video industry. There are two primary interventions the government has made over the years in the video market, which my bill repeals: the compulsory copyright license and retransmission consent.

These laws impose mandates on individual consumers and businesses, they violate the property rights of content creators, and they treat similar services differently. While I know these legacy issues are not the focus of today's hearing, Mr. Chairman, I look forward to discussing them at a future hearing here in this committee.

In his prepared remarks, Mr. Diller states that consumer demand is a powerful force and those who give consumers what they want will be rewarded in the marketplace. I couldn't agree more, which is why I believe we should be creating deregulatory parity in the video market, so investment and innovation, not lawyers and lobbyists, is rewarded in a free economy to the ultimate benefit of all consumers.

Finally, Mr. Chairman, I want to express my sincere interest in working together with you to seek ways to improve our laws and regulations to better serve competition, innovation, the national economy, and, most importantly, the American consumer.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much, and thank you for those comments, which obviously I share about working together. We have not sat together before, but we will sit together in the future.

Our witnesses are sublime. Barry Diller, who I've known for many years, my wife says hi, is Chairman of IAC, former Chairman of Paramount Pictures, Fox Broadcasting, and USA Broadcasting. And you're an investor in Aereo.

You're very knowledgeable about the history of video, and you have spoken previously about how the disruptive change presented by online video may change the nature of pay television. So we welcome your testimony, sir.

**STATEMENT OF BARRY DILLER, CHAIRMAN
AND SENIOR EXECUTIVE, IAC**

Mr. DILLER. Thank you. I'm glad to appear before you today.

I have a long, some say too long, career in entertainment and media. I've been chairman of three major studios, broadcast stations, broadcast network, cable channels and now Internet companies with more than 50 brands. So I've been both a practitioner and a student in the evolution of media over the last 45 years.

With ubiquitous broadband Internet access, an unlimited pipe of options will increasingly be available for all audiences. And together with the advances in consumer devices like the iPad, it'll allow consumers to access the content they want directly from producers without middlemen, without toll takers, wherever and however they want.

This is the great future of consumer choice and competition, and, I think, the realization of generations of public policy aspirations, that is, if we protect and encourage the miracle of the Internet, which allows anyone to press a send button and publish to the world without having to go through the closed systems that have so dominated media since its very beginning.

Contrast that future with the past world of less than a handful of broadcast television stations. This evolved in the 1970s and 1980s with the advent of cable television and satellite video distribution, but its development was encircled by rules and regulations designed primarily to preserve the incumbent broadcasters. Hardly surprising that given any technological development that threatens the hegemony of the existing players is going to be opposed by them.

Then along came video recorders when Sony introduced the Betamax video cassette recorder. This was opposed in a suit by Universal and Disney, at the time, two of the largest producers of programming. They contended that no one should have the right to make a copy of their material. Courts disagreed and the VCR industry boomed.

It made way for private, on-demand consumer consumption through the sale or rental of prerecorded video cassette tapes. Cable and satellite then offered all manner of services enabled by the technology of the video recorder.

Now, along comes the great revolution of the Internet, affecting every pocket of commerce, except, oddly, the way most people receive the most popular video programming.

But even with the restrictive TV everywhere concept that demand a cable or satellite subscription, broadband Internet has enabled a few online video-on-demand services to begin a transition to the online environment.

This great Internet revolution is ready now to provide a new platform for competition that will, in turn, lead to video packages and à la carte offerings driven by consumer choice and device innovation, rather than dictated by the financial interests of a handful of programmers and distribution companies. How can that not be in the public interest?

There are no barriers to entry on the Internet. Creators have the opportunity to make and distribute whatever is their fancy. If intermediaries have less control over the TV ecosystem, creators would be able to reach viewers more directly and will not have to sign over so many rights to distributors. Viewers would benefit from being able to watch vastly more programming in the way they want to watch it and from having an alternative to subsidizing the current unwieldy marketplace.

New technology can allow a more modern approach to receiving local broadcast programming. Right now, roughly 15 percent of Americans rely solely on over-the-air television because it's difficult

to install home antennas or because of problems with reception. This ought to be of concern to Congress which appropriated \$650 million to ensure that households could actually receive the signals when digital replaced analog broadcasting.

Aereo, a company in which I have invested, has invented technologies that allow consumers to get a clear, perfect picture over the Internet and watch live local broadcast television on any connected device, an iPad, an iPhone or an Internet-ready television set.

It provides its members with their own antenna capable of receiving high-definition local broadcasts. Properly understood, Aereo allows a consumer to outsource or locate remotely an antenna and DVR and to use that equipment to access the over-the-air content to which they are all entitled. It's DVR and the cloud technology as a breakthrough as the consumer needs no extra wires or set top boxes or fangled remote controls that no one understands.

By making over-the-air digital broadcast signals actually useful to consumers, Aereo is bringing forth the very reality that Congress sought, that Congress invested close to \$1 billion in, and at no additional cost to taxpayers.

Aereo is but one example of how the Internet can inject competition into the video marketplace. Online video is just beginning. It'll take all kinds of new products—a lot of failures that will move these systems from a closed to an open environment. It will take vigilance to make certain that net neutrality continues to be safeguarded, that no roadblocks or toll bridges can be inserted between the producer and the consumer.

My hope is that Congress keeps the most watchful eye as these marketplaces develop. I know at some point soon the Communications Act of 1996 will have to be rewritten to take into account the Internet which didn't exist when the Act became law.

Incumbents have natural incentives to limit competitive threats. Congress should be vigilant that the rule of the game favor entry, innovation and competition. In the end, there's no stopping technical innovation, but I would hope that a wise and engaged Congress will make certain that we have the levellest playing field, most encouraging environment for new media over the next crucial years of its development.

Thank you for listening. And I'll be happy to answer any questions I can.

[The prepared statement of Mr. Diller follows:]

PREPARED STATEMENT OF BARRY DILLER, CHAIRMAN AND SENIOR EXECUTIVE, IAC

Mr. Chairman, and Members of the Committee, I welcome the invitation and opportunity to appear before you today to discuss the "The Emergence of Online Video: Is It The Future?" IAC is a leading Internet company with more than 50 brands, including Ask.com, Match.com, Citysearch, Electus, and Vimeo. I also serve as the Chairman and Senior Executive of Expedia, Inc., the world's leading online travel company. Prior to my work at IAC and Expedia, I've enjoyed a long career in broadcast and cable television, and in the motion picture industry.

Let me start with perhaps an obvious point, which is: The future of video is here. The confluence of ubiquitous broadband Internet access with incredible advances in consumer devices like the iPad increasingly allows consumers to access the content they want, when they want it, and how they want it. These innovations exponentially increase consumer choice and competition and are consistent with public-pol-

icy aspirations for a dynamic, consumer-driven marketplace for video programming, as well as preserving the essential consumer right to broadcast television access.

1. The evolution of video distribution

Contrast today's opportunities with the world of old media. Not so long ago, video content was distributed through a handful of broadcast television stations. In this world, viewers passively consumed a fixed, pre-scheduled menu of content provided by three or four national commercial television networks and one channel of public broadcast programming. And all of this consumption took place on a single device—the humble television.

This world began to evolve in the seventies and eighties. With the advent of cable television and satellite video distribution, consumers were given viewing options beyond those offered by over-the-air broadcasters. Today, there are an estimated 600 national cable programming networks, plus another 100 regional networks.

Alongside the growth of the cable platform, a key technological development took place in 1975 when Sony introduced the Betamax videocassette recorder. Betamax—and soon after VHS—gave consumers the ability to “time-shift” video programming. This time shifting ability gave consumers the freedom to record a video program in advance and watch it later, expanding consumer choice by untethering them from schedules determined by broadcasters.

The VCR also made possible private, “on-demand” consumer consumption of feature films through the sale or rental of prerecorded videocassette tapes.¹ Interestingly, the motion picture studios sought to block the VCR. The case was ultimately decided in favor of Sony by the Supreme Court in *Sony Corporation v. Universal Studios*² (also known as the “Betamax” case). Despite the studios’ fears, the new market that VCRs made available proved to be one of the most lucrative for those very same studios. Innovation can yield extraordinary benefits that are not always readily and immediately apparent. Later, cable companies began offering Video-On-Demand (“VOD”) services that enable viewers to watch broadcast or cable network programming or movies on demand at the consumer’s convenience for a limited time. Again, technology progressed and enhanced consumer choice, which benefitted every participant in the video-programming ecosystem.

2. The rise of online video and the exponential growth in available content

Recently, the widespread availability of broadband Internet has, in a short time, transformed video content access and delivery. For example, it has enabled video-on-demand services to migrate to the online environment. Online video distributors are available to any consumer with a broadband Internet connection and provide consumers with even more choices for high-quality (and low-quality) video programming. This marketplace has burst on to the scene and is expected to grow significantly. The number of viewers who watch full-length television shows online grew from 41.1 million in 2008 to 72.2 million in 2011.³

When the distribution of full-length video programming is added to user-generated video content and other non-full length video, the number of Americans that watch video online is staggering. In April 2011, U.S. Internet users engaged in over 5.1 billion viewing sessions and 172 million users watched online video content. Cisco forecasts that video traffic is poised to grow to over 60 percent of Internet traffic by 2015, with an annual growth rate of 48 percent for consumer Internet video consumption between 2010 and 2015.

Today, consumers access video programming through a variety of platforms, including over-the-air broadcasting, traditional Title VI “cable service” (e.g., Comcast’s XFINITY), Internet protocol television (“IPTV”) (e.g., Verizon’s FiOS and AT&T’s U-verse), video “broadcasting” over the public Internet (e.g., MLB.tv), Internet-delivered video-on-demand (“VOD”) (e.g., Netflix, iTunes, Amazon.com), and user-generated video providers (e.g., YouTube, Vimeo).

The Internet enables new and varied platforms for viewing options that compete with the traditional media companies. That genuine, robust marketplace competition will in turn lead to different types of consumer offerings including different types of video packages, unbundled content and a la carte pricing. These changes are driven by innovation and consumer choice. Content distribution is in the hands of the many rather than the few.

¹In December 1988, Blockbuster became the top video retailer in the U.S., with \$200 million in revenue. It had more than 500 stores by the end of that year and replaced Erol’s as the top purveyor of prerecorded videocassettes. *EMAFyi* newsletter, <http://www.entmerch.org/press-room/industry-history.html>.

²464 U.S. 417 (1984).

³*Id.*, citing *Reaching Online Video Viewers with Long-Form Content*, eMarketer.com (July 26, 2010), <http://www3.emarketer.com/Article.aspx?R=1007830>.

One of the biggest benefits of this trend is the proliferation and diversification of content. On the Internet, low barriers to entry have provided virtually everyone with the opportunity to create and distribute original video content. Google's YouTube today sees an average of 48 hours of video uploaded per minute. Companies like Netflix are investing in original programming, competing with traditional cable channels like HBO.

These options not only provide more choices for consumers, they can provide more value. A small but growing number of cable customers are "cutting the cable cord" completely in favor of Internet-distributed video. According to one report, 72 percent of adults who go online at least once a week say the Internet is a better value for the dollar than cable television.

3. Local programming in the online environment

While innovation and competition can and should flourish in the online environment, it is important to protect and preserve the consumer's right to access free over-the-air broadcast television. Right now, roughly 15 percent of Americans rely solely on over-the-air television.⁴

Even with the rise of cable channels and networks, the most popular television programming remains that which is distributed by the major broadcast networks. The four largest broadcast networks attract 8 to 12 million viewers each, whereas the most popular cable networks typically attract approximately 2 million viewers each.⁵

Sometimes, in the face of the ubiquity of cable and satellite, consumers forget that they can access broadcast television with an antenna. In addition, there are sometimes technical challenges to receiving broadcast television signals, whether it is the difficulty of installing a rooftop antenna or problems with reception due to signal interference.

This is a challenge for policy makers on several fronts. As Congress and the Supreme Court have recognized, "the importance of local broadcasting outlets 'can scarcely be exaggerated, for broadcasting is demonstrably a principal source of information and entertainment for a great part of the Nation's population.' . . . Likewise, assuring that the public has access to a multiplicity of information sources is a governmental purpose of the highest order, for it promotes values central to the First Amendment."⁶

The U.S. taxpayer, moreover, has made a significant investment to ensure that these interests are protected in the digital age. Congress appropriated \$650 million to ensure that households could receive local broadcast signals after the transition to digital television.

4. Aereo furthers important governmental purposes

Aereo, a company in which I have invested, furthers government interests and does so at no cost to the Federal taxpayer by letting consumers watch live, local broadcast television over the Internet. The Aereo system lets consumers watch Internet-delivered live, local broadcast television on an Internet-connected device.

Aereo, which launched just last month, provides its members with use of individual antennae capable of receiving high-definition local broadcasts. Aereo enables consumers to watch that programming on the Internet-connected device of their choice and at the time of their choice. Essentially, it allows a consumer to outsource or locate remotely an antenna and DVR and to use that equipment to access the over-the-air content to which they are entitled on an Internet-connected device.

Aereo reminds consumers that they have a right to access over-the-air broadcasts using an antenna. And Aereo provides a technology solution that brings together the simplicity of the antenna and the convenience of locating equipment remotely.

5. The future of competition in the online environment

Aereo is but one example of how the Internet is injecting some much needed competition into the video marketplace. While all of this competition is good and healthy, the online video marketplace is still in its very early stages of development. Netflix' online video streaming service—the largest in the world—is only five years old.

⁴ Fourth Further Notice of Proposed Rulemaking and Declaratory Order, *Carriage of Digital Television Broadcast Signals: Amendment to Part 76 of the Commission's Rules*, DS Docket 98-120 at 4. (rel. Feb 10, 2012).

⁵ Competitive Impact Statement, DOJ, January 19, 2011, *citing* SNL Kagan, *Economics of Basic Cable Networks* 43 (2009); The Nielson Company, *Snapshot of Television Use in the U.S.* 2 (Sept. 2010), <http://blog.nielsen.com/nielsenwire/wp-content/uploads/2010/09/Nielson-State-of-TV-09232010.pdf>.

⁶ *Turner Broad. Sys. v. FCC*, 512 U.S. 622, 663 (1994).

Incumbents have the means and incentive to engage in economic and/or technical discrimination against online video distributors. The FCC has sought to protect consumers against some of the technical means of discrimination in its Open Internet rules; but those rules may not survive judicial scrutiny. Even if they do, cable and telecom companies are experimenting with forms of economic discrimination at the margins of current law. For example, broadband providers that also provide video programming could implement broadband caps in a way that favors their own content. Congress should fully explore these issues and prevent cable and telecommunication companies from leveraging their dominance in existing markets for video delivery to control emerging markets.

6. Ensuring that the future of online video happens

I'm extremely bullish on the emerging world of Internet-enabled video distribution. If properly nurtured, the marketplace will develop multiple forms of distribution and many new competitors. This will in turn stimulate new sources of content and creativity that will give a multitude of options to consumers, while enriching our culture and advancing our economy.

At this time, Congress need only to keep a careful watch as the marketplace develops. We know that incumbents have incentives to limit competitive threats, and Congress must be vigilant that the rules of the game favor entry and innovation. But consumer demand is a powerful force, and those who give consumers what they want will be rewarded in the marketplace.

The future of online video is simply "more." More content, more innovation, more competition. For consumers, the future of online video is more choice and more control. Consumers have the lawful right to watch the content they want, when they want it, and how they want it. The Internet has spurred technological innovation that now makes the exercise of that right possible. And that possibility holds great promise and potential benefit for everyone in the online video ecosystem.

Thank you.

The CHAIRMAN. Thank you, Mr. Diller.

Our next witness is Ms. Susan Whiting, who is Vice Chairman of the Nielsen Company. And I think you're going to talk about how American viewing patterns are changing, which is for sure, and that more households are watching online video than ever before.

Your company has been at this for decades and decades and produced data about American television, which is very helpful, and particularly helpful as we go into this disruptive period where nobody is quite sure where it's all going to end up. So we welcome you.

STATEMENT OF SUSAN D. WHITING, VICE CHAIR, NIELSEN

Ms. WHITING. Thank you, thank you, Chairman Rockefeller, and other members of the Committee.

As you said, I'm Susan Whiting, Vice Chair of the Nielsen Company. You are, I think, familiar with Nielsen's role in television ratings in the U.S., but you may not know we're also a global information and measurement company measuring what people watch on TV, on the Internet, on mobile devices, but also what they buy in retail stores all over the world. So I appreciate this opportunity.

Based on our latest research, the average American watches nearly 5 hours of video each day, 91 percent of which is done watching traditional TV sets in real time or live, meaning they're not recording on a DVR, using video-on-demand or even watching a DVD.

But what has emerged in the last 4 or 5 years is a simple message: Consumers watch their favorite content on the best screen available at that moment, and they watch from more locations and on more devices than ever before.

The availability of digital technology, digital access and the explosion of laptop computers, mobile devices and tablet computers in American life has really enabled this change. These devices, along with, at the same time, a record number of TVs in homes, have provided more screens.

Our latest *State of the Media: U.S. Digital Consumer Report* provides a comprehensive overview of these trends. My testimony today is based on the findings in that report, and the report has been provided to the Committee.

Today, more than 274 million Americans have Internet access through their computers, which has doubled since 2000. In October 2011, nearly 166 million Americans watched video online and more than 117 million Americans accessed the Internet through a mobile device.

Nearly half of all the mobile devices used in the U.S. today are smart phones, which makes it possible to access the video.

Broadly speaking, each month, the average American spends 146 hours and 45 minutes watching TV, 4 hours and 31 minutes watching Internet videos on a PC and 4 hours and 20 minutes watching video on a mobile device. So the use of video and PCs continues to increase. It's up 80 percent in the last 4 years.

So who is using video this way? Our research shows that women are 6 percent more likely to view video online than men. Eighteen to 34 year olds match 35 to 49 year olds as the largest demographic watching videos online.

Sites like YouTube and Netflix together most recently represented 56 percent of the streaming time, which, for the average American, is 4 hours and about 31 minutes each month.

But along with that increase in video consumption online, it's worth noting that 33½ million mobile-phone users now watch video on their phones, which has increased almost 36 percent since last year, and consumers with this access spent 4 hours and 20 minutes doing this.

Consumers are increasingly becoming media multitaskers, meaning that they'll use more than one form of media at the same time. For example, recent Nielsen data shows that 57 percent of smart phone and tablet users in the U.S. checked their e-mail and 44 percent visited a social network site while watching TV. Consumers are finding and accessing their favorite content on more and more devices, more screens. Consumers are saying, unequivocally, that online video will continue to play an increasingly larger role in their media choices.

Thank you, again, Senator Rockefeller, for the opportunity to join you today.

[The prepared statement of Ms. Whiting follows:]

PREPARED STATEMENT OF SUSAN D. WHITING, VICE CHAIR, NIELSEN

Good morning Chairman Rockefeller, Senator Hutchison and members of the Committee. I am Susan Whiting, Vice Chair of Nielsen. You may be familiar with Nielsen's television ratings in the U.S., but we are also a global information and measurement company, measuring what people watch on television, the Internet and mobile devices and what they buy in retail stores and on line. I appreciate the opportunity to join you at today's hearing to share our insights about consumers watching video.

Based on our latest research, the average American watches nearly five hours of video each day, 91 percent of which is done watching traditional television sets in real time, or “live” (meaning they are not recording on a DVR, using Video on Demand, or even watching a DVD.)

What has emerged in the last four to five years is a simple message: consumers watch their favorite content on the best screen available at that moment. And, they watch from more locations and on more devices than ever before.

The availability of digital technology, digital access and the explosion of laptop computers, mobile devices and tablet computers in American life has enabled this change. These devices along with a record number of TVs in homes have provided more “screens.” Our latest “State of the Media: U.S. Digital Consumer Report” provides a comprehensive overview of trends in video consumption. My testimony today is based on the findings in that report and the report has been provided to the Committee.

Today, more than 274 million Americans have Internet access through their computers, double those with Internet access in 2000.

In October 2011, nearly 166 million Americans watched video online. And, more than 117 million Americans accessed the Internet through mobile devices. Nearly half of all mobile devices used in the United States today are smart phones, which makes it possible to access the video.

Broadly speaking, each month, the average American spends 146 hours and 45 minutes watching traditional television, 4 hours and 31 minutes watching Internet videos on a personal computer and 4 hours and 20 minutes watching video on a mobile device.

The use of video on PCs continues to increase—up 80 percent in the last 4 years. Who is using video this way? Our research shows that women are six percent more likely to view videos online than males.

Eighteen to 34 year olds match 35 to 49 year olds as the largest demographic viewing videos online.

Sites like YouTube and Netflix most recently represented 56 percent of the streaming time, which for the average American is 4 hours and 31 minutes each month.

Along with the increase in online video consumption, it is worth noting that 33.5 million mobile phones users now watch video on their phones, a 35.7 percent increase since last year, and the consumers with this access spent 4 hours and 20 minutes each month watching video on a mobile device.

Consumers are increasingly becoming “media multi-taskers”, meaning that they will use more than one form of media at the same time.

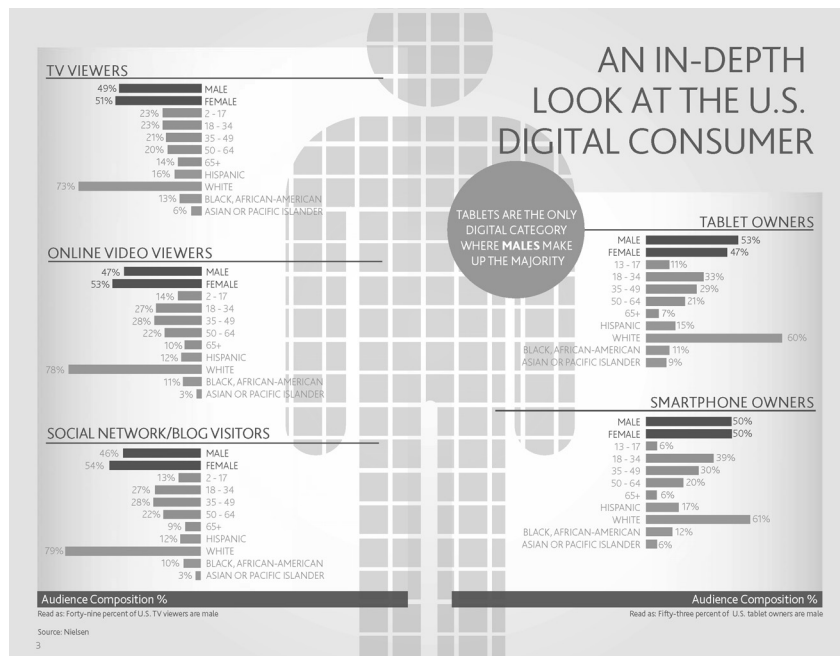
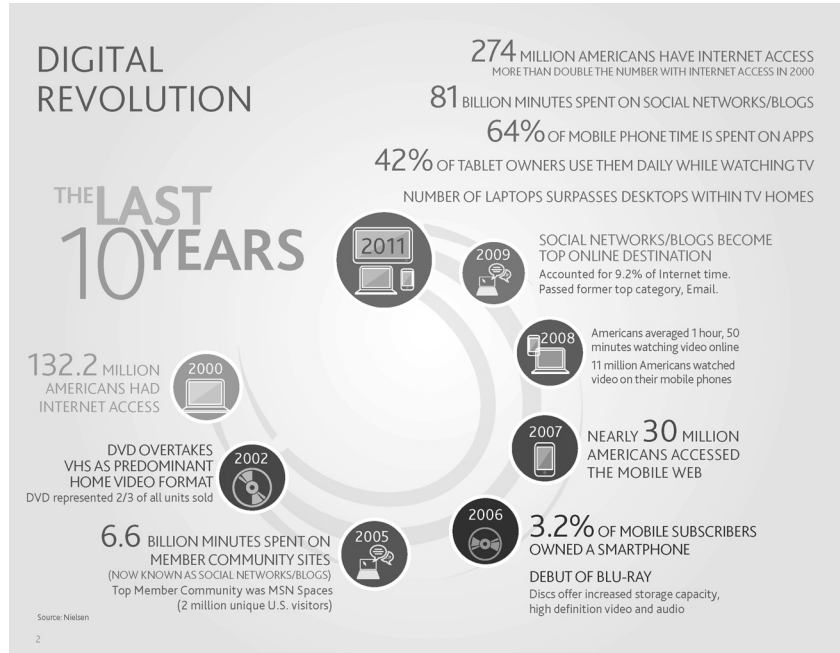
For example, recent Nielsen data shows 57 percent of smart phone and tablet users in the U.S. checked e-mail and 44 percent visited a social networking site while watching television. Consumers are finding and accessing their favorite content on more and more devices, or “screens.” Consumers are saying unequivocally, that online video will continue to play an increasingly larger role in their media choices. Thank you again Senator Rockefeller for the opportunity to join you today.

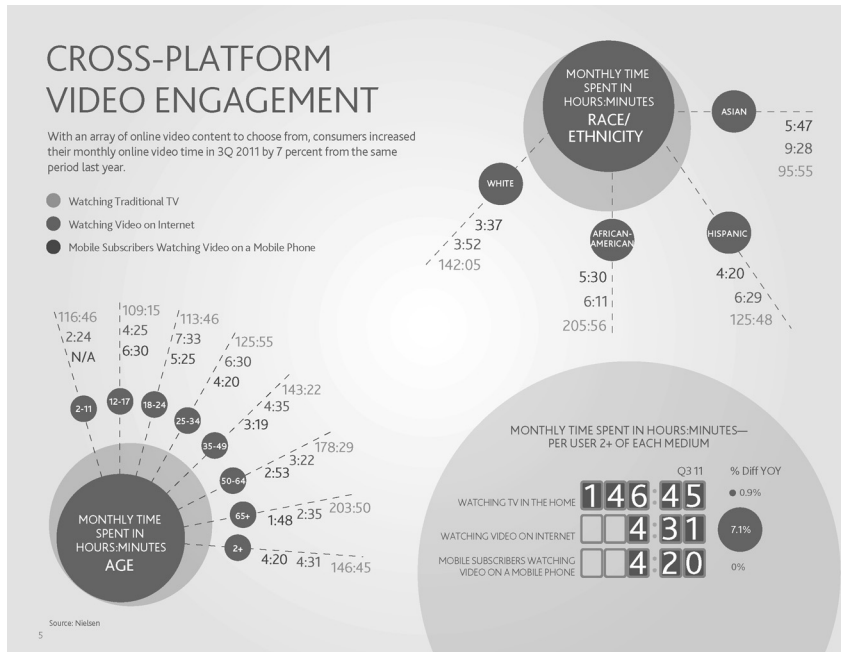
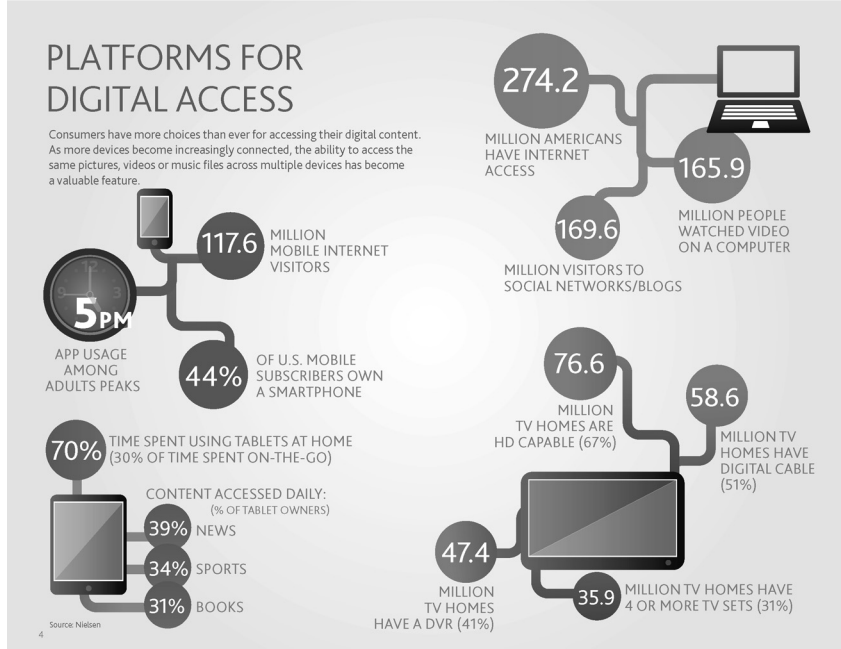
STATE OF THE MEDIA:
U.S. DIGITAL CONSUMER REPORT
Q3-Q4 2011

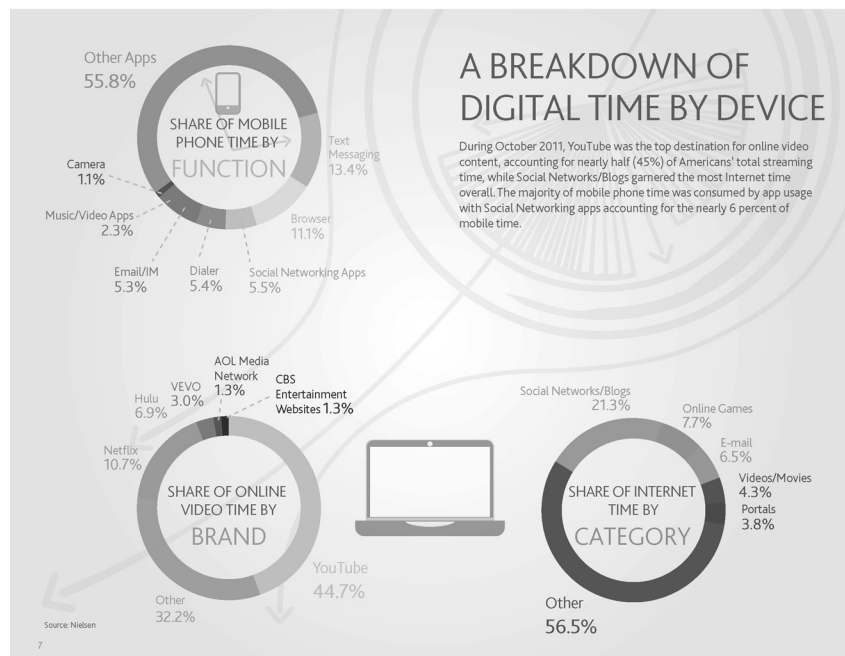
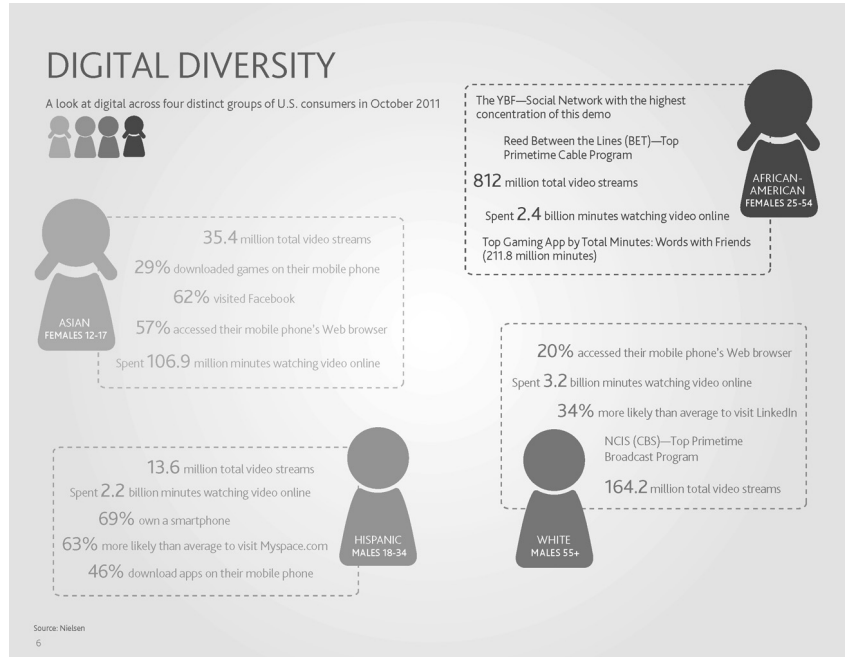


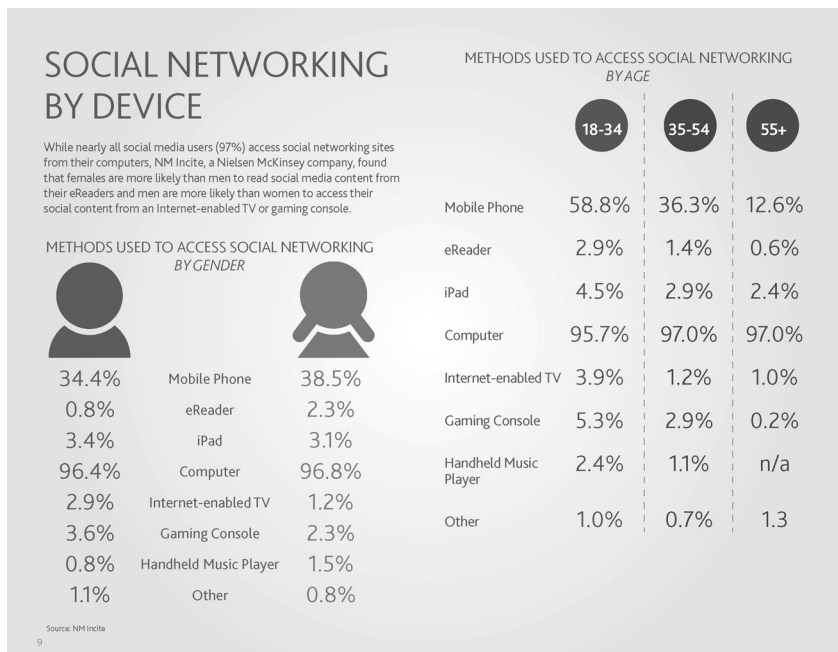
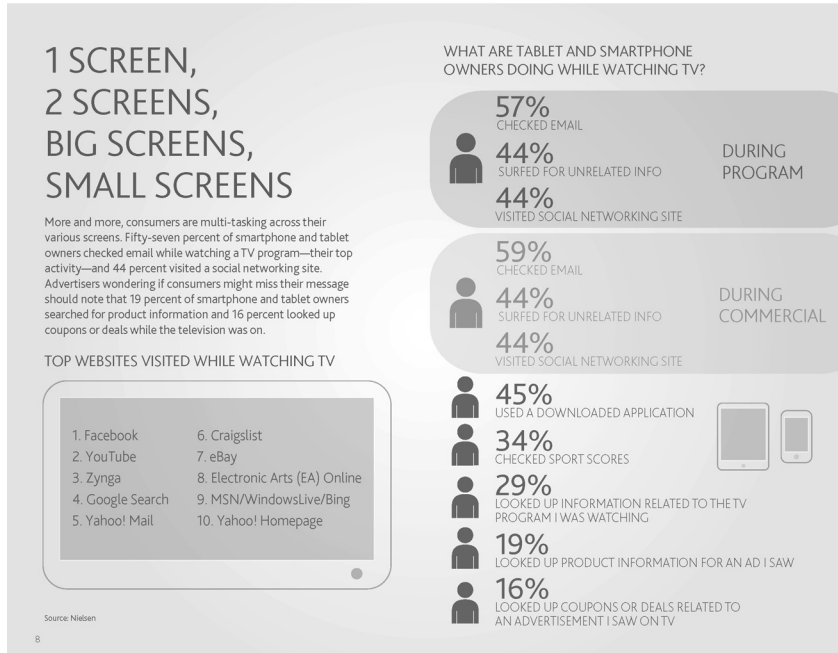
The Emergence of On Line Video: Is it the Future?
 Highlights from Nielsen's U.S. Digital Consumer Report Q3-Q4 2011

- The Average American watches nearly 5 hours of video each day, 91 percent of which is done watching traditional television in real time.
- Today, more than 274 million Americans have Internet access through their computer more than double the number with Internet access in 2000.
- In October 2011, nearly 166 million Americans watched video on line. More than 117 million Americans accessed the Internet. Nearly half of all mobile devices used in the United States today are smart phones.
- Each month, the average American spends:
 - 146 hours and 45 minutes watching traditional television
 - 4 hours and 31 minutes watching Internet video
 - 4 hours and 20 minutes watching video on a mobile device
- Video use on personal computers in the third quarter increased by 80 percent compared with the third quarter of 2008.
- Among digital categories of time, YouTube and Netflix accounted for about 56% of total streaming.
- More and more, consumers are multi-tasking between their various screens. Fifty-seven percent of smartphone and tablet owners checked email while watching TV and 44 percent visited a social networking site.









TO THINK IT IS TO BLOG IT

By the end of 2011, NM Incite, a Nielsen/McKinsey company, tracked over 181 million blogs around the world, up from 36 million in 2006. Three of the top ten social networks in the U.S. during October were true blogs (Blogger, WordPress.com, Tumblr), with a combined 80 million unique visitors. Among the top social networks, Tumblr has shown the strongest growth in visitors, more than doubling its audience from last year.

Emerging Social Network: Pinterest

- 4.5 million unique U.S. visitors during Oct 2011 – 37 times its size at the beginning of 2011
- Consumers ages 25-34 – most likely out of all age groups to view pages on Pinterest
- 92 percent of Pinterest's audience also visited a Mass Merchandiser site during Oct 2011

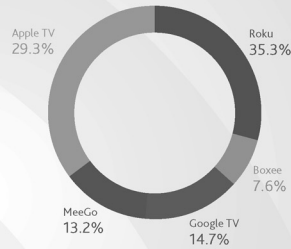
NUMBER OF BLOGS TRACKED BY NM INCITE



Source: Nielsen and NM Incite

SHARE OF SOCIAL MEDIA BUZZ AMONG SELECT OVER-THE-TOP VIDEO DEVICES (3Q 2011)

READ AS: During 3Q 2011, Apple TV accounted for 29.3 percent of buzz mentions among the select group of over-the-top devices



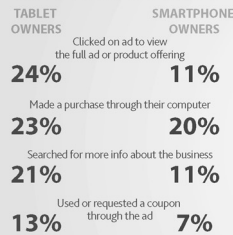
TOP 10 U.S. SOCIAL NETWORKS/BLOGS BY UNIQUE AUDIENCE (Oct 2011, Home & Work Computers)



10

MARKETING TO THE DIGITAL CONSUMER

WHEN VIEWING ADS ON THEIR DEVICE:

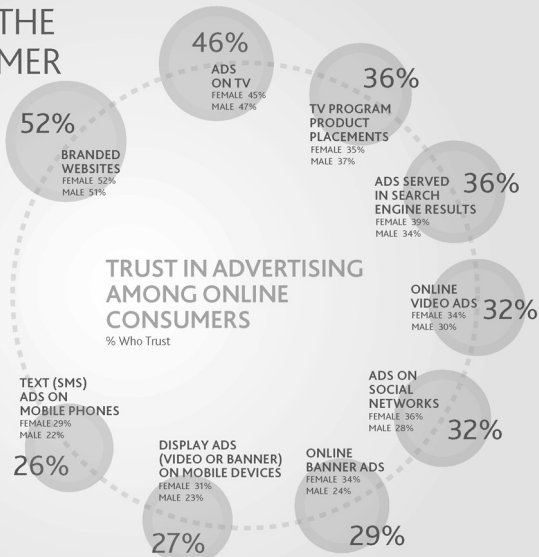


AMONG MOBILE CONNECTED DEVICE OWNERS:

- 33% find ads that offer custom information based on their location useful
- 26% are more likely to look at ads if they have an interesting video
- 20% enjoy ads that have interactive features

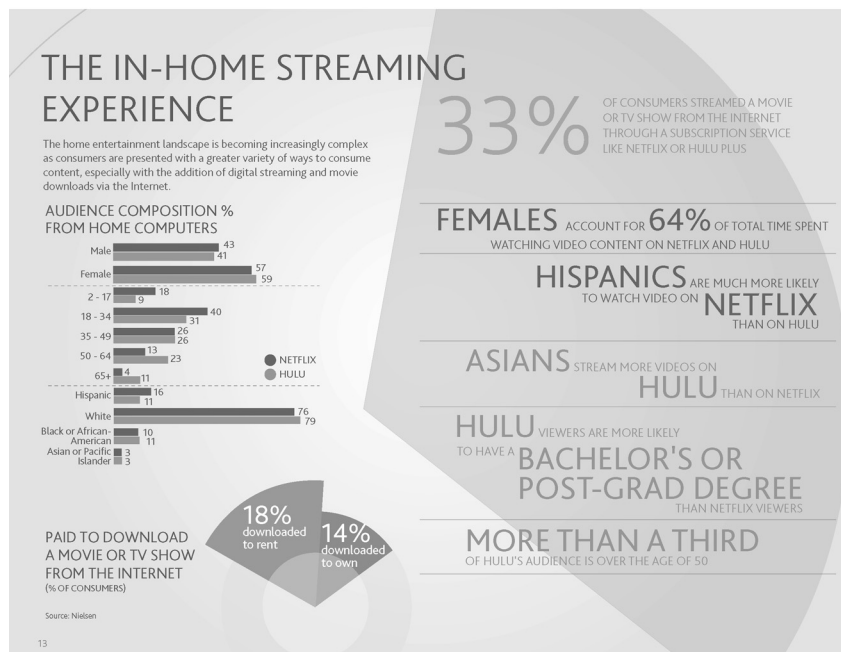
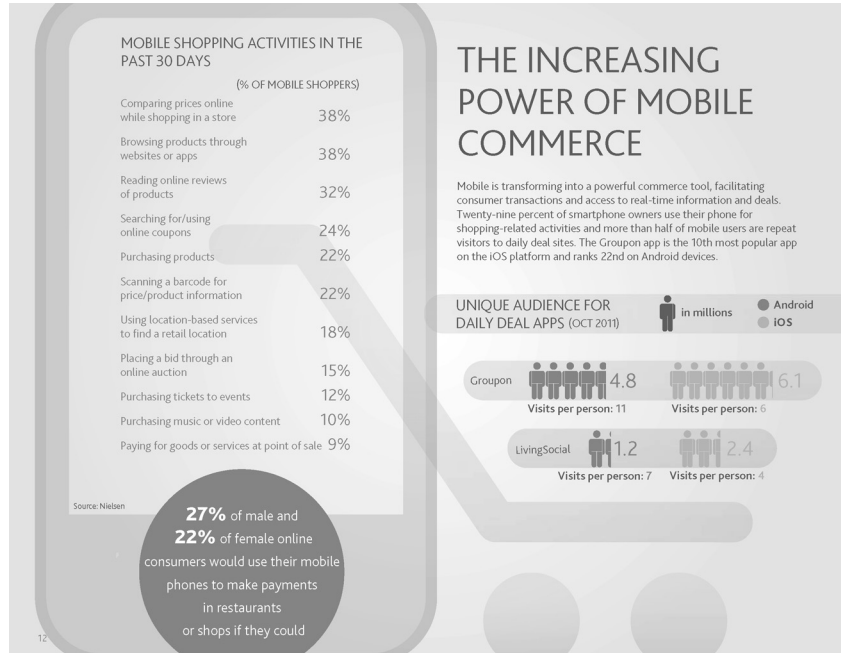
TRUST IN ADVERTISING AMONG ONLINE CONSUMERS

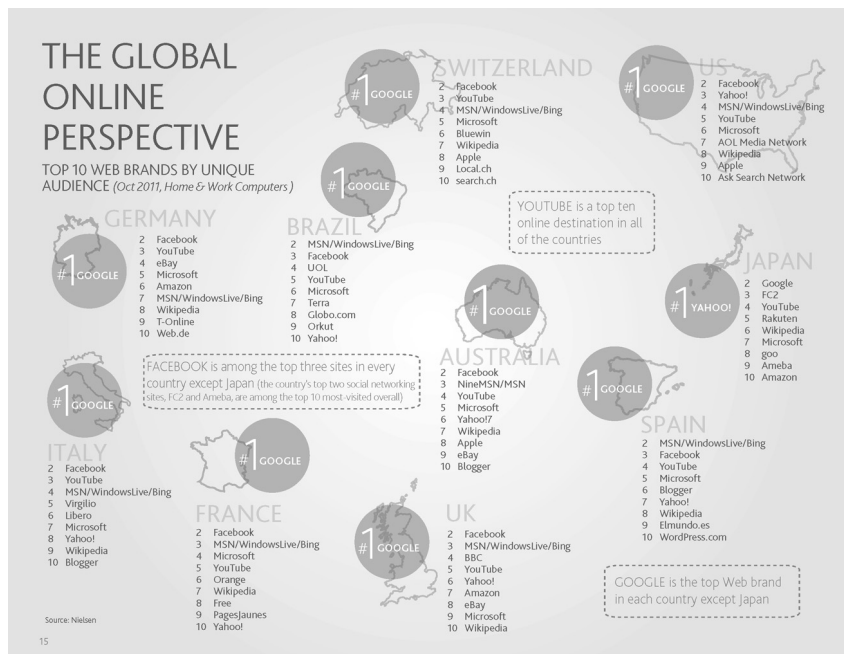
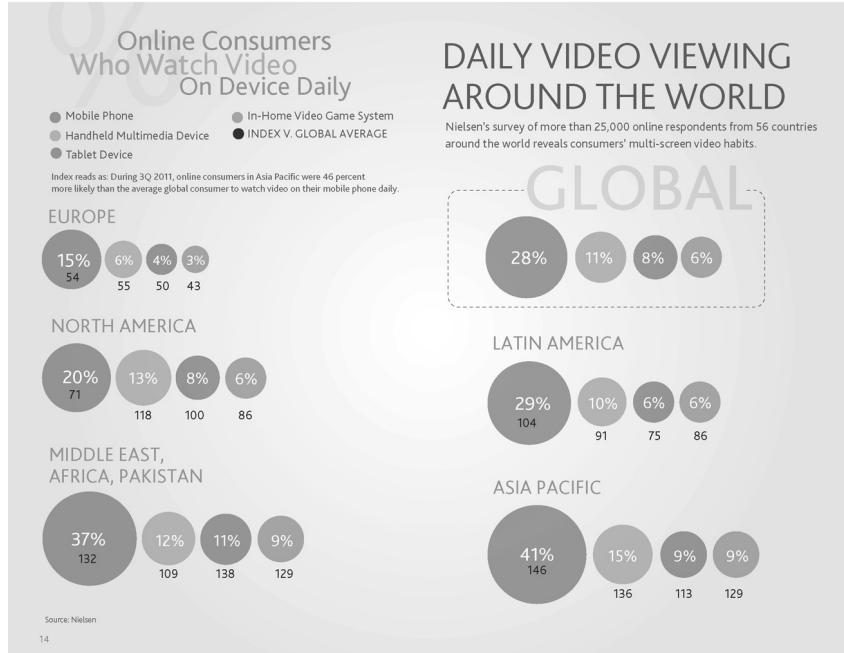
% Who Trust



Source: Nielsen

11





SOURCES

- 2 · 2000: NetView (Home & Work), Jan 2000
- 2002: VideoScan, 2002
- 2005: NetView (Home & Work), Oct 2005
- 2006: Mobile Insights, 3Q 2006
- 2007: Mobile Insights, Jan 2007
- 2008: VideoCensus (Home & Work), Jan 2008
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- 2011: NetView (Total), Oct 2011
- Smartphone Analytics, Oct 2011
- Mobile Connected Device Report, 3Q 2011
- NPOWER (NPM Sample), Aug 2011
- 3 · TV Viewers: National UEs and MarketBreaks 2012
- Online Video Viewers: VideoCensus (Total), Oct 2011
- Social Network/Blog Visitors: NetView (Total), Oct 2011
- Tablet Owners: Mobile Insights, 3Q 2011
- Smartphone Owners: Mobile Insights, 3Q 2011
- 4 Mobile
 - Mobile Internet Visitors: Mobile Insights, 3Q 2011
 - Smartphone Penetration: Mobile Insights, Oct 2011
 - Peak App Usage: Smartphone Analytics (Android), Oct 2011
 Internet
 - Internet Access and Social Network/Blog Visitors: NetView (Total), Oct 2011
 - Video Viewers: VideoCensus (Total), Oct 2011
 TV
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- 5 · Cross-Platform Report 3Q 2011. [Click here to download the complete report for more detailed footnotes.](#)
- 6 · Online Video Streams and Total Minutes: VideoCensus (Total), Oct 2011
- Social Networking: NetView (Total), Oct 2011
- TV Programs: NPOWER, Oct 2011, Live+SD. Excludes Breakouts, specials, Sports, programs less than 5 minutes in duration and programs with less than three telecasts
- 7 · Mobile Phone: Smartphone Analytics, Oct 2011
- Online Video: VideoCensus (Total), Oct 2011
- Internet: NetView (Total), Oct 2011
- 8 · Activities while watching TV: Mobile Connected Device Report, 3Q 2011
- Top sites visited while watching TV: NPOWER (Cross-Platform Homes), Oct 2011
- 9 · NM Incite, State of Social Media Survey, April 2011
- 10 · Top U.S. Social Networks/Blogs and Pinterest: NetView (Home & Work), Oct 2011
- Blog trend: NM Incite, Oct 2006-2011
- Over-the-Top device buzz: NM Incite, 3Q 2011
- 11 · Trust in Advertising: Nielsen Global Survey, 3Q 2011
- Among smartphone, tablet and connected mobile device owners: Mobile Connected Device Report, 3Q 2011
- 12 · Mobile Shopping Activities: Mobile Insights, Oct 2011
- Daily Deal Apps: Smartphone Analytics, Oct 2011
- Mobile Payments (red circle): Nielsen Global Survey, 3Q 2011 (U.S.)
- 13 · Netflix/Hulu: VideoCensus (Home), Oct 2011
- Downloading and streaming behaviors: New Media Tracking, Jan 2012
- 14 · Nielsen Global Survey, 3Q 2011
- 15 · NetView (Home & Work), Oct 2011

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Chairman ROCKEFELLER. Thank you, Ms. Whiting.

Mr. Paul Misener, you're the Vice President of Amazon.com, and I believe that you will speak about Amazon's entry into the online streaming video business, following on the heels of its efforts to digitize books and make them more widely available through its Kindle service.

I'm going out on a limb here, but I think you're going to stress the need for an open Internet, called "network neutrality," which is controversial around here, but which I support and which my colleague to my left does not, in order for Amazon to compete against incumbent video service providers. We welcome you.

Mr. MISENER. Thank you very much, Chairman Rockefeller.

The CHAIRMAN. Did I get it about right?

Mr. MISENER. Pardon me?

The CHAIRMAN. Did I get it about right?

Mr. MISENER. Yes, sir. Absolutely right.

The CHAIRMAN. Thank you.

STATEMENT OF PAUL MISENER, VICE PRESIDENT FOR GLOBAL PUBLIC POLICY, AMAZON.COM

Mr. MISENER. My mom will be proud.

But thank you, Mr. Chairman, Members of the Committee.

Exactly a quarter century ago, the FCC set out to establish rules for so-called advanced television, which was the very first significant update to consumer video quality since the introduction of color TV in the early 1950s.

The commission established a private sector advisory committee to evaluate the technology, and I had the honor of assisting that

committee's chairman, Richard Wiley. His committee can be thanked for the beautiful theater-quality video that we now take for granted when we watch a movie or football game on HDTV.

But much more emerged from Chairman Wiley's committee than pretty pictures. Already in the mid-1980s digital video capture and compression had come of age, but in the early 1990s, the Committee also oversaw the emergence of digital transmission of digital video data bits. The future of video was to be digital all the way from the camera to display.

Two other crucial developments occurred at the same time. First, the World Wide Web was invented, forever transforming the Internet into a graphic-rich, easily accessible medium.

Second, Congress overhauled U.S. communications law, and although the 1996 Act maintained some legacy distinctions among broadcasting, cable, satellite, telephone and mobile services, it also presciently codified the concept of an information service.

It was into this era that Amazon.com was born. Amazon opened on the World Wide Web in July 1995 as an online bookstore and quickly grew to offer other media products, including music CDs, VHS tapes—if we remember those—and DVDs, all of which require physical delivery.

But, today, the Amazon Instant Video service offers customers throughout the United States—whether in populace or in rural areas—the ability to buy, rent or subscribe to a huge catalogue of videos delivered instantly, 24 hours a day. Amazon Instant Video is available on PCs and Macs and other Internet-capable devices.

Amazon Instant Video currently offers more than 120,000 movies and commercial-free television episodes for purchase or rental and about 25,000 of those are available in high definition.

In February 2011, Amazon introduced Prime Instant Video as a subscription service, through which Amazon Prime Members can watch instantly, and for no additional costs, more than 17,000 video titles selected from the Amazon Instant Video library. This gives our customers an easy opportunity to explore new video content.

Now, although we recognize that our customers want to watch video content from the comfort of their homes, we also recognize that they are on the move, and thus they want access to digital video, not just any time, but also anywhere.

To support that demand, last September, Amazon introduced the Kindle Fire—this device—which is a fully-functioning tablet that allows customers to access the Internet, read books, play games and, importantly, watch high-quality video.

And if our customers have any questions about our online video services and the Kindle Fire, our customer service team, including specialists in our Huntington, West Virginia, facility are standing by to help.

And so, Mr. Chairman, to answer the question posed in today's title hearing, online video has emerged, and, undoubtedly, will be a key medium of future video delivery.

With continued growth of broadband Internet-access service, we believe the consumer demand and choice will cause continued growth of online video services for an even brighter future.

This assumes, of course, that the Internet will remain a non-discriminatory, open platform. The open Internet encourages innovation and allows consumers to decide whether a particular product or service succeeds or fails, and this openness is particularly crucial in rural areas of the country where other choices are more limited than elsewhere.

The FCC has pledged to monitor the potential for any competitive or otherwise harmful effects from specialized services, but I ask that your committee remain vigilant on this and other issues of Internet openness. For example, consumer data caps instituted by some network operators merit such vigilance. Consumer choice, without impairment, must be preserved.

Amazon would be happy to assist the Committee in any way we can be helpful, including if the Committee were to undertake a review of the 1996 Act. As the testimony delivered in this morning's hearing indicates, the lines between the communications services separately addressed in that legislation continue to blur, and how consumers, especially young people, now think of television does not match longstanding legal and regulatory conventions. The hearing today already has drawn important attention to that fact.

And so, in conclusion, Mr. Chairman, Amazon.com believes that the future of online video is very bright for consumers, and we look forward to working with the Committee to preserve consumer choice.

Thank you again for the opportunity to testify and I look forward to your questions.

[The prepared statement of Mr. Misener follows:]

PREPARED STATEMENT OF PAUL MISENER, VICE PRESIDENT FOR GLOBAL PUBLIC POLICY, AMAZON.COM

Good morning, Chairman Rockefeller, Ranking Member Hutchison, and members of the Committee. My name is Paul Misener, and I am Amazon.com's Vice President for Global Public Policy. On behalf of our company and customers, thank you for inviting me to testify about the emergence and future of online video.

Exactly a quarter century ago this year, the FCC set out to establish rules for so-called "advanced television," the first significant update to consumer video quality since the introduction of color TV in the early 1950s. The Commission established a private sector advisory committee to evaluate the technology, and I had the honor of assisting that committee's chairman, Richard Wiley. He and his committee can be thanked for the beautiful, theater-quality video that we now take for granted when we watch a movie or football game on an HDTV.

But much more emerged from Chairman Wiley's committee than pretty pictures. Already in the mid-1980s, digital video capture and compression had come of age; but in the early 1990s, his committee also oversaw the emergence of digital *transmission* of digital video data bits. The future of video was to be *digital*—all the way from camera to display.

Two other crucial developments occurred at the same time. First, the World Wide Web was invented, forever transforming the Internet into a graphic-rich, easily accessible medium. In stark contrast to previous media, such as newspapers, magazines, radio, and television, the Web is a "pull"—not "push"—medium, in which consumers choose what content they want, and when. "On demand" is essentially baked into the Web.

The second crucial development was that Congress overhauled U.S. communications law. Although the 1996 Act maintained some legacy distinctions among broadcasting, cable, satellite, telephone, and mobile services, it also presciently codified the concept of information service.

It was into this era that *Amazon.com* was born. Amazon opened on the World Wide Web in July 1995 as an online bookstore and quickly grew to offer other media products, including music CDs, VHS video tapes, and DVDs—all of which require physical delivery. One day back in 2005, when my eldest son, Jay, was three years

old, he sat on my lap as we ordered him a DVD from Amazon. When I clicked to place the order, he hopped off my lap and ran to the front door to wait for “the brown truck.” Amazon endeavors to provide excellent service to our customers, but this particular customer really wanted *instant delivery*, which wasn’t yet available, but is now.

Today, the “Amazon Instant Video” service offers customers throughout the United States, whether in populous or rural areas, the ability to buy, rent, or subscribe to a huge catalog of videos, delivered instantly, 24 hours a day. Amazon Instant Video is available on PCs and Macs and other Internet-capable devices, including PlayStation3 consoles, and connected TVs and other living room-based consumer electronics components such as Blu-ray players and Roku boxes.

Amazon Instant Video currently offers more than 120,000 movies and commercial-free television episodes for purchase or rental, including the latest hit movies like *The Descendants*, *Girl with the Dragon Tattoo*, and *War Horse*, and popular television series like *Mad Men*, *Vampire Diaries*, and *Justified*. Many TV episodes are available to rent or buy within 24 hours after the episode first airs on broadcast or cable television. And about 25,000 titles are available in high definition.

In February 2011 Amazon introduced “Prime Instant Video” as a subscription service. As many of you know, “Amazon Prime” is a membership program where, for \$79 a year, you can receive unlimited free two-day shipping on millions of physical products. But there are other benefits to Prime membership, including access to Prime Instant Video, through which Amazon Prime members can watch instantly—and for no additional cost—more than 17,000 video titles selected from the Amazon Instant Video library. This gives our customers an easy opportunity to explore new video content.

Although we recognize that our customers want to watch a variety of high quality video content at affordable prices from the comfort of their homes, we also realize that they are on the move, and thus they want access to digital video not just *anytime*, but also *anywhere*. To support that demand, last September Amazon introduced the “Kindle Fire,” which is a fully functioning tablet that allows customers to access the Internet, read books, play games and, importantly, watch high quality video. In addition to being fully integrated with Amazon’s content offerings, Kindle Fire users have a wide range of popular applications available for download, including apps that enable access to content from Netflix, Hulu Plus, Pandora, and more.

Kindle Fire includes “Whispersync” technology to remember for you the point at which you pause any video you are watching. This means that if you pause a movie or television episode on your Kindle Fire, you can easily pick up where you left off on another device such as your laptop computer or your Internet-connected television at home. Device memory is not a constraint because Amazon digital content is always accessible from “Your Video Library,” where digital content owned or rented by customers is stored and accessed via the Internet. And, if our customers have any questions about our online video services, our customer service team—including specialists at our Huntington, WV, facility—are standing by to help.

So, Mr. Chairman, to answer the question posed in this hearing’s title, online video has emerged, and undoubtedly will be a key medium of future video delivery. Consumers already have a wide array of opportunities to stream, rent, or buy online video programming, including from Amazon. With continued growth of broadband Internet access service, we believe consumer demand and choice will cause continued growth of online video services for an even brighter future.

This assumes, of course, that the Internet will remain a non-discriminatory, open platform. The open Internet encourages innovation and allows consumers to decide whether a particular product or service succeeds or fails. Any specialized services offered by network operators should not harm the delivery of content via broadband Internet access service, nor impede its growth, nor be offered on unequal terms (that is, bits are bits). And this openness is particularly crucial in rural areas of the country, where other choices are more limited than elsewhere.

The online video services we offer today are only the latest examples of benefits to consumers resulting from the open Internet functioning as a platform for rapid innovation and vigorous competition. The FCC has pledged to monitor the potential for anticompetitive or otherwise harmful effects from specialized services, but I ask that your Committee remain vigilant on this and other issues of Internet openness. For example, consumer data caps instituted by some network operators merit such vigilance. Although Internet subscribers should pay for the bandwidth they use, immutable or unrealistically priced data caps could hinder or prevent competitive products and services made possible by online video. Consumer choice, without impairment, must be preserved.

Amazon would be happy to assist the Committee in any way we can be helpful, including if the Committee were to undertake a review of the 1996 Act. As the testi-

mony delivered this morning indicates, the lines between the communications services separately addressed in that legislation continue to blur, and how consumers—especially young people—now think of television does not match longstanding legal and regulatory conventions. Your hearing today already has drawn important attention to that fact.

In conclusion, Mr. Chairman, *Amazon.com* believes that the future of online video is very bright for consumers, and we look forward to working with the Committee to preserve consumer choice. Thank you again for the opportunity to testify. I look forward to your questions.

The CHAIRMAN. Thank you very much, Mr. Misener.

And, finally, Blair Westlake, who is Corporate Vice President, Microsoft, and you're responsible for the Xbox, not personally, but perhaps you are, at Microsoft. And that started as a video game, but it's gone on to become an amazing instrument. We welcome your testimony.

**STATEMENT OF BLAIR WESTLAKE, CORPORATE VICE
PRESIDENT, MEDIA AND ENTERTAINMENT GROUP,
MICROSOFT CORPORATION**

Mr. WESTLAKE. Chairman Rockefeller, members of the Committee, thank you for the opportunity to testify on the emergence of online video today.

I oversee the Media and Entertainment Group out of Microsoft. That's my core scope and responsibility.

Microsoft engages with video in several ways, including through our various releases of the Windows Operating System and Windows Phone products, but I am also here to discuss how the market is delivering consumers greater choice and control over their viewing with online video through our Xbox Video Service.

I have three ideas for you to consider today. First, we are in the early stages of the transition to the future of video. A few years from now, current online video offerings will look like a mere bucket in the proverbial ocean of content.

Second, while the current online video distribution marketplace is dynamic and vibrant, the Committee is right to keep a watchful eye as content and Internet service providers adapt to these changes.

Third, the video marketplace is on the edge of even greater change that will feature new forms of content, greater interactivity, access and payment choices for the consumers.

Let's first consider the present online video market. Even 5 years ago, it was not possible for consumers to access high-definition, high-quality video content delivered over the Internet. The witnesses at today's hearing represent just a few of the businesses creating an abundance of viewing options for consumers.

As you may know, Xbox did, in fact, start just as a video-gaming console. When Netflix chose to make its online video service available beyond the PC, so that it could be viewed on a TV set, Netflix did so through our platform. That was a pivotal moment in TV history that has helped revolutionize consumers' viewing habits.

Today, Microsoft's Xbox LIVE service has more than 40 million subscribers worldwide watching 300 million hours of video per month. Internet-delivered video enables consumers to access a broad array of video content at various price points, whenever and whatever broadband-enabled device they want.

These choices from Xbox and others complement traditional cable, satellite and telco services, but to emphasize, we are not a substitute for traditional video offerings.

For example, we have also seen consumers choose smaller discounted programming packages offered by many of the MVPDs and who may then opt to supplement their basic tier cable service with online video offerings, such as Netflix, a practice that is referred to as cord shaving.

All this demonstrates a current online video market that is vibrant and dynamic. The future will bring even more change. In my view, the TV landscape will likely experience more change in the next 18 months than the past five years.

TV will increasingly become a two-way, interactive experience. To give just one example, Sesame Street programming that Microsoft will release in a few months, will be completely interactive for children and leverage the power of gesture and voice control.

Children will be able to interact directly with Elmo and Cookie Monster on their TV screen to learn counting and the alphabet and to actually see themselves on the TV in the program, thereby stretching their imaginations like never before.

TV also will be increasingly a multi-device experience. Soon, consumers will be able to watch all the content they want and pay for on any and all of their devices. We are already seeing production companies create content with mobile screen specifically in mind. Innovation also will be introduced into other aspects of the television viewing experience.

For example, the integration of Bing Search functionality and voice-recognition technology enables some consumers to find an episode of Mad Men by using just their voice. These are just some of the exciting changes on the horizon and they highlight a key lesson, the vital importance of broadband access.

Microsoft is committed to digital inclusion and affordable access to wired and wireless broadband. As we move forward, policies that promote access to universal high speed broadband are critical to health and vibrancy of a market that enables innovation and benefits consumers.

Finally, the future of video also depends on companies adapting to sustainable, innovative business models and broadband management policies that do not discourage or impede consumer consumption of the vast and innovative online video offerings that are possible in the future and consumers have come to expect.

Today, companies are experimenting with transactional video-on-demand, subscription-based distribution and electronic sell-through models. All these options enhance choice and are good for consumers in so many ways.

As content owners and distributors develop new ways to monetize their products and their services, I fully expect that innovative, alternative business models will come into view. Out with the old and in with the new.

In conclusion, Microsoft is pleased to be a part of this vibrant and competitive video marketplace that is rapidly evolving to a future that will give consumers more choice, more control and better offerings.

Thank you, and I welcome your questions.

[The prepared statement of Mr. Westlake follows:]

PREPARED STATEMENT OF BLAIR WESTLAKE, CORPORATE VICE PRESIDENT, MEDIA AND ENTERTAINMENT GROUP, MICROSOFT CORPORATION

Chairman Rockefeller, Ranking Member Hutchison, Members of the Committee, thank you for the opportunity to testify today on the emergence of online video.

I am Blair Westlake, and I serve as the Corporate Vice President of Media and Entertainment in Microsoft's Interactive Entertainment Business group. Microsoft engages with video in several different ways, including through our Mediaroom IPTV product which we license to various telephone operators around the world, through MSN, and through our Windows operating system and Windows Phone product, but I am here to discuss video from the perspective of Microsoft's Xbox and Xbox LIVE service.

As you may know, Xbox is a video game console that Microsoft first introduced in 2001. Xbox quickly developed into a leading gaming platform which, coupled with the Xbox LIVE service, offers users the ability to engage online in multi-player games.

Over the past several years, Xbox, Xbox LIVE, and, more recently, the Xbox Apps Marketplace, which launched in December 2011, have transformed Xbox from a leading gaming platform to a revolutionary entertainment hub, increasingly used by Microsoft's Xbox users to view movies and television shows. With more than 40 million Xbox LIVE users across the globe, Microsoft is very much part of the video *present*, coupling online gaming with digital content delivery, and we are pleased to share our perspective on what we think the video *future* will look like.

I. The Video Marketplace Today

Before we look to the future, it is important to understand the market today, and how that market has evolved in a relatively short period of time.

In 1992, when this Committee looked closely at the video marketplace, the Committee found that the sole cable company providing service in a community offered consumers about 60 channels, and typically required the consumer to rent a set-top box. Ten years later, that picture had changed, but only a little. Satellite providers had entered the business, but consumers still had few choices for video programming providers and devices to use to access that programming.

The past few years, by contrast, have produced a huge wave of innovation and change, making available to consumers new "over the top" ("OTT") video offerings. Today, Microsoft's Xbox LIVE is one of several services that delivers OTT high-definition, high-quality video content to consumers for viewing on televisions or monitors, something that was not possible ten years ago, and was still considered a future goal five years ago. Consumers access OTT services, such as Xbox LIVE, using broadband connectivity they obtain from an Internet service provider ("ISP"), such as their cable or telephone operator, and so the expansion of broadband has made OTT services possible.

In the past two years, these phenomenal changes have migrated to new mobile platforms as smartphones, slates, and tablets and have forever changed when, how and where consumers enjoy video content. From the perspective of 1992, or 2002, or even just five years ago, the increase in the number of consumers watching long-form video content, such as movies and TV shows, online and on mobile devices is staggering, and the increase in the number of video hours viewed online each day is amazing.

Although it is difficult to pinpoint a specific event, I believe that the "tipping point" of the video ecosystem revolution took place in November 2008, when Netflix made its streaming service widely available to televisions via Microsoft's Xbox. Since that time, innovation and change have moved at least twice as fast as the pace during the prior five years. Xbox, for example, initially was a gaming device that might have been found in the den, a child's bedroom, or in the basement. As streaming video on Xbox LIVE was rolled out several years ago and as Xbox video apps, described below, were introduced, the Xbox device gradually moved out of areas of the home dedicated to individual family members and into the proverbial "family room."

Today, Xbox truly has become a household entertainment hub. In December 2011 alone, more than 60 percent of U.S. Xbox LIVE Gold¹ members used Xbox LIVE

¹Xbox LIVE has two services: a free service known as Xbox Live Free and a paid service known as Xbox LIVE Gold. "Gold"—a \$5 per month subscription service—enables subscribers to access social media services, such as Facebook and Twitter, compete in multiplayer games with up to eight gamers in other locations, stream music from services such as iHeart radio,

Continued

entertainment video apps, such as Hulu Plus, ESPN3, and HBO GO, for an average of an hour each day.

To underscore how much OTT video viewing is occurring today, consider the following numbers: Netflix recently announced that during the fourth quarter of 2011, its subscribers consumed *2 billion hours* of video.² Xbox LIVE subscribers are fast approaching 300 million hours per month in viewing video apps, and viewing hours are increasing by the day. Indeed, the hours of video consumed by Xbox LIVE members increased 140 percent from 2010 to 2011.

The entry by Microsoft and others into the video aggregation and online delivery market has contributed to consumer choice. The Xbox device gives consumers access to a platform which enables them to view a broad array of video content whenever they want it, including content directly from premium programmers such as Major League Baseball, ESPN, HBO, and MSNBC; from MVPDs such as Verizon FiOS and Comcast; and from other OTT providers such as Netflix and Hulu. The Xbox platform also provides enhanced experiences for consumers, such as our soon-to-be-released interactive *Sesame Street* game. And today, rather than scrolling through 200 channels on your traditional MVPD service, you can use Bing to perform voice-enabled searches for content and then stream selections through your Xbox.

John Skipper, CEO of ESPN, summed it well when he characterized ESPN's distribution through Xbox LIVE as "phenomenal, the usage on that platform has been terrific, the quality of what our networks look like on that platform is terrific, there is a lot of capability and other things you can do around the live games on that platform."³

II. Today's Over-The-Top Video Marketplace Is Dynamic and Vibrant

Some of us before the Committee today are evidence of the vibrancy of the over-the-top video distribution marketplace in 2012. It bears emphasis that a hearing on video competition held only five years ago would have included almost no one on this panel. The OTT providers here have afforded consumers new options and created a new dynamic in the video marketplace.

The revolutionary change brought about by online video providers is reflected in the new level of choice and control in the hands of consumers—choice that goes far beyond DVR time-shifting. Rather than having their viewing experiences tied to a network's schedule of programs, consumers now can be the master of their own TV viewing schedule. Today, consumers can access a vast library of the programming they want, when they want it. Xbox LIVE, Amazon Instant Video, Hulu, Apple's iTunes, and other OTT providers offer consumers movies and TV content at the click of a mouse, the touch of a remote, a wave of their hand, or a voice command. And consumers are not limited to just paying for a month's-worth of programming, but in some instances may select and pay to watch a single program they wish to view.

These choices complement traditional cable, satellite and telco services, and enhance consumer control. For example, with Verizon's FiOS apps, FiOS subscribers who also subscribe to Xbox LIVE, may access an array of TV programming through Microsoft's Xbox platform. Most of the familiar channel-branded apps, such as HBO GO and ESPN, use "TV Everywhere" authentication to verify that the user has a subscription with an MVPD.

Xbox LIVE and the other companies represented here are part of a video ecosystem that gives consumers access to third-party options that were not readily available until just two or three years ago. Using these new tools, consumers can design the mix of programming options that is right for their household's tastes, time and wallets, augmenting the content and experience available from their monthly MVPD subscription with those enhancements offered by Xbox or other OTT services. For example, consumers may elect to drop premium movie channels and supplement their basic service with OTT services such as Netflix. Industry observers refer to this as "cord shaving."

While consumers are likely to continue to consume video primarily from traditional cable, satellite, and telco services,⁴ the choices in the market today give all

video chat using the Kinect accessory, and watch video content such as Netflix, Hulu and Comcast's video-on-demand cable service.

²Netflix Members Enjoy More Than Two Billion Hours of Movies and TV Shows in Fourth Quarter, (Jan. 4, 2012), <http://www.prnewswire.com/news-releases/netflix-members-enjoy-more-than-two-billion-hours-of-movies-and-tv-shows-in-fourth-quarter-136652138.html>.

³Interview of John Skipper, CEO of ESPN (January 31, 2012) available at http://allthingsd.com/video/?video_id=E672BBB4-F22F-4258-9FF5-0CEE39461E36 (taking place at the All Thing Digital's "Dive Into Media" conference).

⁴NPD Group, January 2012 (noting that 59 percent of cable/satellite TV subscribers prefer having one single provider for their pay video services, and that many consumers continue to

consumers more control over their viewing habits, so they are less tied to linear programming that has been the norm in the television business for several decades.

Consumer demand for high-quality video over multiple devices and platforms is today's reality and defines expectations and a marketplace that are here to stay. To meet and satisfy consumer demand, content owners and key stakeholders must look to exciting new and evolving technologies and rethink traditional business models and distribution strategies.

Today, we are witnessing many companies experimenting with and evaluating different business models, including new approaches to transactional video-on-demand, subscription-based distribution, and electronic sell-thru models. Xbox, for example, currently provides access to content directly from more than a dozen programming services in the U.S., including video apps from Major League Baseball, MSNBC, HBO and ESPN, and the number of video apps we offer is expanding by the month. All these new options enhance choice, and are compelling options for consumers. The challenge remains for content owners and distributors to develop new ways to monetize their products and services.

While many see the old models as under pressure in the long term, the new alternative business models have not yet come into view. The future of video is as much—or even more—dependent upon companies devising sustainable and innovative business models that reflect the possibilities of this exciting time than technology deployment.

At Microsoft, our vision for Xbox LIVE is to deliver all the entertainment consumers want, while making the enjoyment of that content easy. The expansion of Xbox LIVE to Windows Phones and our soon to be released Windows 8 operating system, all with a consistent “Metro style” user interface and the ability for consumers to enjoy, control and consume content across their various Microsoft software-enabled devices, are examples of the progress being made in bringing new choices for accessing content to consumers.

This hearing gives the Committee an opportunity to consider the future of video. We have set out our picture of the current online video marketplace. The single most important issue shaping the future of video is the availability of universal, high-speed broadband access. We think the Committee is right to keep an eye on this market as it unfolds and as Internet service providers and content providers adapt to the new market.

While we are not at an “end of history” moment when it comes to the video marketplace, the changes that have taken place, and are underway, in the video ecosystem are truly remarkable and transformative. As we move forward, however, the availability of universal, high-speed broadband will continue to be critical to the health and vibrancy of a market that supports and enables innovation and competition.

III. The Future Video Marketplace: New Forms of Content, Interactivity, Access, and Consumer Choices

Consumers have benefited from significant changes in the past five years. In the next five, change will be even greater. The early 2000s saw predictions for how the Internet, growth of broadband, and IT infrastructure investments (including those further enabling access to the web) were going to change the video marketplace. As we now know, that change did not occur in the first half of the decade, but rather in the second half, and the change has been exponential.

The weekend after this year's Consumer Electronics Show, I shared some observations with my colleagues. I commented then, and I believe even more today, that we will experience more change in the next 18 months in the TV landscape than we did in the past five years.⁵ And I think we are only in the early innings of the beneficial changes that consumers have yet to see and experience.

While I do not pretend to predict the future, I think the way people access and consume video will continue to evolve in these key categories:

Search and discovery: As we have seen with the integration of Microsoft's search engine, Bing, enabled by Xbox's Kinect accessory, which provides a voice and gesture recognition offering, there is an increased focus on making consumers' experience more intuitive. In only 18 months, Microsoft's Kinect device has transformed experiencing games and entertainment to a level that was

prefer convenience over cherry-picking a variety of lower priced subscription video-on-demand services.

⁵As Bill Gates observed, “We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten.” Bill Gates, *The Road Ahead* (1997).

“science fiction” a few years ago, thanks to its natural user interface which recognizes gestures, voice and motions.

We are making it easy for consumers to find and enjoy their favorite TV shows, movies and music across a variety of services. Search and discovery will allow the technology to fall into the background and enable the content to be the focal point of the experience. And Kinect for Windows development tools are now in the hands of thousands of creative designers who are building applications that go far beyond anything we could have imagined.⁶

TV will be a two-way interactive experience: Since the first devices were connected to the Internet, people have held out the promise of interactive television. With Xbox and Kinect, we are beginning to see TV experiences that are truly two-way experiences and go way beyond ordering pizza from your TV. To give one example, in the coming months, we will offer programming like our *Sesame Street Kinect*—we describe it as “playful learning”—which will be completely interactive for children and will leverage the power of gesture and voice control. Recent innovation in Natural User Interface technology (“NUI”), will enable children to interact directly with Elmo and Cookie Monster, to advance the story line of an episode, to see themselves in the program (thanks to Kinect’s camera), and to learn the alphabet and many other educational offerings—all interactively versus through traditional, linear, one-way viewing.

This may look like magic to children, but in fact it is hard work and takes considerable time and resources. Microsoft has commissioned the shooting of 50 percent more footage of the linear version of *Sesame Street* so that children will be able to interact fully with the program. The difference between children watching the linear versus interactive versions of the program is simply amazing to see firsthand.

Television will increasingly be a multi-device experience: In a next wave of evolution, we expect that consumers will be able to watch the content they pay for on any and all of their devices. It is envisioned that the second screen will receive increased attention from content owners, which will actively develop new shows with the smartphone and mobile devices in mind.

Many in the creative community have recognized what the future holds. Production houses are already developing concepts for new shows that allow viewers to unlock extra content by following along on their second screens. Creating relevant, engaging second screen experiences will encourage fans to interact more deeply with their favorite TV shows.

* * *

In conclusion, Microsoft is pleased to be part of a vibrant and competitive video marketplace today that is rapidly evolving to a future that will give consumers more choice and more control to use the vast online resources for their education and entertainment.

The CHAIRMAN. Thank you, Mr. Westlake.

We’ll do five-minute rounds, and I’ve got about 100, but we’ll just keep going until you exhaust.

This is to all of you, if you want. Ms. Whiting notes in her testimony the popularity of online video is growing. We agree with that, but traditional television also remains very popular.

I want to understand better how online video will compete with pay television packages from cable and satellite companies, and, therefore, my questions.

Do you believe online video will grow to become a full substitute for pay television? Will it compete directly with pay television packages that are so popular still today?

⁶For example, surgeons are using Kinect to practice surgical moves before putting gloves on and researchers are exploring how Kinect can be used to help children with autism, stroke, and physical therapy patients. For more “Kinect Effect” examples, see <http://www.xbox.com/en-US/Kinect/Kinect-Effect>. Microsoft is working with more than 200 innovation leaders around the world including United Health Group, Siemens, American Express, Boeing, Mattel, Houghton Mifflin Harcourt, Citi, Toyota and Unilever to utilize Kinect in revolutionary ways.

And, second, even if it does not become a full substitute, will it result in some downward pricing pressure on pay television service, which costs more for consumers each and every year?

Please.

Ms. WHITING. So we have a little bit of history to look at. In the digital transition that just occurred about three years ago, the full digital, many homes actually kept their pay cable television or satellite. So it's, in some cases, a matter of switching the provider, but they were paying—what we see is, as I said before, a record number of televisions in the home, which may seem counter-intuitive, but people love large screen TVs, high-definition experiences. And I think it's the ease of use that will matter.

So while I won't predict, what we do know is good content absolutely wins, whether it's user generated or created in other ways. And so if people provide the right content and it has a business model, mainly it has been supported by advertising or by subscription that works, they'll continue to produce the content.

Consumers follow the content. The devices will multiply, and I think it's the ease of use and the ability to watch whatever you want wherever you want it whenever you want it that we see has supported traditional television programming. It actually has grown. It's the access that matters.

And I think other members of this panel may have more insight into the pricing and other things, but if we look at consumer demand, people want the content, and as long as the content is there, it's a matter of just making access easy, simple and different.

Mr. DILLER. To answer directly, I don't think it's going to be a substitute. I think it's a supplement. I do think that what online can offer is more à la carte programming.

You spoke earlier about having 500 channels and only watching 10, but you essentially pay for the channels that you do not watch and therefore subsidize them, and that's our current system. It's a totally closed system.

The Internet gives the ability to offer individual programs or discrete packages or the narrowest of narrow casting. And so as time goes on and we get more television sets naturally in big screen format connected to the Internet, you have this incredible optionality that can only come from the Internet. There is no closed pipe.

So I think that its long-term effect is it's not going to replace pay television, but it will certainly be up there in terms of consumption, if not exceeding the consumption of pay television over time.

The CHAIRMAN. For now, it's attitude.

Mr. DILLER. Sorry, did you say attitude?

The CHAIRMAN. Yes.

Mr. DILLER. Yes.

The CHAIRMAN. OK. Let me do one more very quick one, thus apologizing to you two.

Obviously, television is incredibly powerful, and it informs us or doesn't inform us and it in some way shapes who we are to be.

So we're talking about the advent of online video and how new technologies could change the nature of television. And, once again, we go back to, I believe, that disruptive technologies come along when there is something to disrupt and when what we have is not

working for us. So this leads me to ask, so what went wrong with television or is it just about technology?

Mr. DILLER. It's about technology. Sorry. Please.

The CHAIRMAN. To anybody.

Mr. MISENER. Well, Mr. Chairman, if I may, I think the medium of television was always about pushing information out to consumers with the hope that they would appreciate it and want it.

The Internet, in contrast, by its very nature, is a pull medium, where consumers pull to themselves what they choose and what they want. Our whole business model is predicated on vast selection, convenience and value, providing low prices to customers.

And nowhere is this more clear than with the provision of our video services. We want to give our customers the choice to watch what they want to watch, rather than have to watch what was pushed to them by someone in the traditional media.

The CHAIRMAN. One more crack?

Ms. WHITING. Yes. I think, stepping back, it's about what you define television to be. So what we see happening is, you know, there's live TV, you're watching when it's immediately broadcast. There's so much now done with time shifting, with DVRs. Obviously, they're distributed online video on your PC, on your tablet, on your phone.

So I'm not sure that anything has gone wrong with TV so much as you've had this incredible technology change in how to access it, and that's what we see happening, and it's complicated. It's complicated for everybody in the business to adapt to, but it's really about the distribution.

Mr. DILLER. Just one little fillip here. In 1960 or so, if the world had the Internet, the whole distribution system would have changed. We would not have wired the country. We would not have put up satellites. We would have simply done it over this wonderful Internet ubiquity.

The CHAIRMAN. No, I agree. And one thing that occurs to me, and I'm coming right to you, Senator DeMint, is the marvel of how we push broadband and how, with the exception of some rural areas, which I care fiercely about, it has worked wonderfully, and also wireless. So it's, in a sense, like public policy, and your innovation has created a perfect playing field.

Senator DEMINT. Thank you, Mr. Chairman.

Mr. Diller, I'm curious, if you were still in the broadcasting business, what would you think about Aereo?

Mr. DILLER. Well, you know, if I was in the broadcast business, I would do what every broadcaster has done since the beginning of broadcasting, which is to protect their arena and do anything to prevent anyone else from getting into it.

But I would also recognize that part of being a broadcaster was receiving a free license, and, in return, you programmed in the public interest and convenience. And core to that was that if you had a finger in the air or an antenna or whatever, you could receive a signal without anybody taking a toll or doing anything to prevent you from receiving that signal directly.

That's what Aereo does. Aereo is technology that simply allows a consumer to get what was the quid pro quo for a broadcaster receiving a free license.

Senator DEMINT. So do you see yourself as selling network subscriptions, in effect, or do you see yourself as reselling content?

Mr. DILLER. We're not reselling anything. What we're doing, what we have is a technological platform.

Senator DEMINT. But it's a network, in effect.

Mr. DILLER. No, it's not a network.

Senator DEMINT. People can subscribe to your network to receive content.

Mr. DILLER. Well, it's one to one. Essentially, you have an antenna that has your name on it. I mean, not literally, but figuratively, because it's very tiny. Your name wouldn't fit on it. Certainly, Senator Rockefeller's wouldn't.

But you have this antenna and it's one to one. It is not a network. It is a platform simply for you to receive over the Internet broadcast signals that are free and to record them and use them on any device you like.

Senator DEMINT. Well, the broadcasters have licensed with the producers of the content to broadcast that, but you are going to, in effect, capture that and resell it without a license.

Mr. DILLER. We're not. Sorry, Senator.

Senator DEMINT. You're not?

Mr. DILLER. We're not reselling anything.

Senator DEMINT. But you charge a subscription.

Mr. DILLER. What we're doing is we charge a consumer for the infrastructure that we've put together, for the little antenna and for our DVR cloud service. That's what the consumer is paying for.

The consumer doesn't have to pay. We don't charge for programming that is broadcast on this free direct—

Senator DEMINT. So you're a distributor.

Mr. DILLER. Pardon me?

Senator DEMINT. You're a distributor then.

Mr. DILLER. No, we're not.

Senator DEMINT. You're not a distributor.

Mr. DILLER. Sorry. I mean, I would like to agree with you on something.

Senator DEMINT. OK. Well—

Mr. DILLER. But we're not a distributor at all. We're not distributing, except if you say that what we are doing by—if you would call an antenna that RadioShack sells, charges a consumer for, a distributor, then it would be analogous.

Senator DEMINT. So you would contend, then, if Amazon or Microsoft, as businesses, could intercept broadcast signals and sell them through what they have set up now, right over the—

Mr. DILLER. Well, the laws, the system for broadcasting is, I mean, Microsoft could do it, presuming in Redmond, where there is a TV signal, that they offered the same kind of platform that we would offer, because the system of broadcasting transmission is local. So it's utterly one to one. A local broadcaster sends a signal out and we provide an antenna to receive it and put it over the Internet and allow people to record it.

Senator DEMINT. OK. All right, Mr. Misener, do you plan to intercept broadcast signals and sell them over your network? Well, I guess, do you sell them as part of your content? Would you see that as a legitimate thing to do at this point?

Mr. MISENER. Senator, thank you for the question. We currently don't offer live programming in our video service, and we don't know what the future holds for our other businesses. We're all about providing our customers vast selection and choice, and so the 120,000 available movies and TV episodes that——

Senator DEMINT. But you license those.

Mr. MISENER. Yes, sir.

Senator DEMINT. Or deal with the copyrights with everyone who owns them, right?

Mr. MISENER. That's correct.

Senator DEMINT. So you don't necessarily see yourself as a competitor to traditional pay TV services like cable or satellite or——

Mr. MISENER. No, we're close partners with the studios who produce the content.

Senator DEMINT. Oh, OK. All right. Just as an aside question, do you think a Walgreens or a CVS has the right to charge a manufacturer more for an end-aisle display than they do a position on the shelf?

Mr. MISENER. I'm sorry, Senator, I didn't follow the question.

Senator DEMINT. Have you ever seen an end-aisle display of products in a grocery store?

Mr. MISENER. Sure. Sure.

Senator DEMINT. Do you think that retailers should have a right to charge more for the end-aisle display than they do for a position on the shelf?

Mr. MISENER. Goodness, Senator, I guess I feel that the products and services that accompany like an Amazon offer is——

Senator DEMINT. No, no, this is just a question about a grocery store. Do they have a right to charge differently for displays versus shelf space?

Mr. MISENER. Well, they do.

Senator DEMINT. OK. Well, that's really all I want to know. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator DeMint.

Senator Cantwell.

**STATEMENT OF HON. MARIA CANTWELL,
U.S. SENATOR FROM WASHINGTON**

Senator CANTWELL. Thank you, Mr. Chairman, and thank you for this hearing.

And I thank the witnesses. I think, combined at least, three of you employ about 100,000 people related to Washington State, so thank you very much for that, and thank you for continuing to innovate in the business models.

And while we could have a lot of discussions here about a wide number of issues from net neutrality and bandwidth caps and online distribution rights and piracy and privacy and what the FCC is capable of doing and not capable of doing and simplicity, one of the things that I wanted to discuss or get your input on is just, as we're talking about business models related to entertainment and the changes and what Congress needs to do, to me, there's one incredible opportunity with the advent of online content and distribution of that content, and that's in the area of education, and particularly when you talk about Kinect and two-way devices.

I'm curious about what you see, Mr. Westlake, as opportunities in the area of education. I could say healthcare is another application, but education where just about every university could put every bit of content online and change the dynamic and access to education, whether you're going to give them a degree or not, to me, it's almost irrelevant, the fact that you can make educational materials so available.

And, Mr. Diller, you made a habit of staying ahead, you know, innovating and staying ahead of business, making sure you don't fall subject to business models as they change or under competition. So what do you see as the opportunities for this content to be made more readily available to the American public, when we know one of our biggest, biggest challenges as a country is making sure we have a competitive workforce and driving down the cost of education?

So, Mr. Westlake, anybody on the panel, but, Mr. Westlake, I want to know because Kinect, in my understanding, is two-way communications, too. So one of the things that people are now saying about online or interactive education is the limitations. But with Kinect, you're obviously changing the dynamic to get more interactive going with individuals.

Mr. WESTLAKE. Thank you, Senator. Yes, that's correct. In fact, I look at the Sesame Street Playful Learning Program that we'll be releasing in September as a catalyst for companies, producers to actually see what can be done.

This is technology that, Kinect, that you mentioned, is, for those of you not familiar, it's spelled with a K, K-I-N-E-C-T, as opposed to the word connect, is an accessory that attaches to the Xbox and has the capability of detecting voice and motion sensing as well as has a video camera.

And what this program, what we've done is commissioned 50 percent more programming to be shot integrating it with the production of the Sesame Street program that's produced each year. They produce about 40 hours of linear program, and taking the additional content and combining it with the linear, showed they're able to interact, and, as I described, can throw a ball toward the television set and actually the ball magically appears on the television set as though this nonexistent ball, for example, just suddenly fell into their television set, something that was previously impossible to do.

And what we're doing is we look at this as a seed for showing others this is what we can do. This is what we've done in other areas, which is when we know the technology, what better way than to demonstrate it.

So I think it's the beginning of the stage of being able to have producers produce the content that is available for children to be used in this fashion.

As you said, the same with healthcare. There are any number of ideas that could be used for this technology to bring healthcare content, et cetera.

Senator CANTWELL. Mr. Diller, education. What do you—

Mr. DILLER. Well, I would say that if online technology does not transform education, it would be a crime. It is already beginning to do so. But have to remember we've only had broadband for just

a few years. So the ability to have rich video transmitted is a recent phenomenon.

We have things like Khan Academy, which is a wonderful service for education. We have online Kaplan's online university, which has, I think, 100,000 members, so to speak. Everything is eventually going to be online, and there are healthy potential business models that are going to support that, and they'll have a profound effect, I think, profoundly positive effect, because you will finally get some competition, some really lively, creative competition in education, how it's delivered, what its products are, et cetera. So I'm very, I would say, I can't imagine that it won't be transformed.

Senator CANTWELL. Thank you. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Cantwell.

Senator Thune.

**STATEMENT OF HON. JOHN THUNE,
U.S. SENATOR FROM SOUTH DAKOTA**

Senator THUNE. Thank you, Mr. Chairman, and I want to thank the panel. The technology is remarkable. The innovation is amazing, and, you know, we here in Congress are just trying to keep up with what's going on out there, as you can tell from listening to us this morning.

But I'm curious to know, and this is for anybody on the panel, because there are some studies out there that suggest that streaming accounts for about 54 percent of Internet traffic in North America during peak times.

Netflix and YouTube account for 37.6 percent of North America's daily Internet consumption, which leads to a question, and that is do we, as a nation, have sufficient infrastructure and bandwidth to support the increased demand for high-quality, online streaming services?

And what are the foreseeable issues that arise for our Internet infrastructure in terms of this exploding demand and availability of online video, and what should Congress be watching for in this area, if anybody would like to take a stab at that?

Mr. MISENER. Well, Senator Thune, thank you very much. I think the core characteristic of the Internet is that consumers are allowed to pull to them the information that they seek. So it's all about consumer choice. The information doesn't get into the wire, as it were, unless the consumer asks for it.

And so consumers are driving that growth of online video. Consumers are demanding devices like the Kindle Fire. They're demanding the broadband delivery of video services.

And so long as consumers are able to make that choice in the future, so long as the networks remain open to that consumer choice, it will be a bright future for consumers, because they will decide what they want to receive through the Internet.

Senator THUNE. But in terms of capacity, just the infrastructure to handle all this, I mean, does anybody see that as a problem? Does that impose any kind of a constraint on the future growth of the industry?

Mr. DILLER. Of course it's a problem. It is going to be a problem. We do not have a first-rate broadband infrastructure in this coun-

try. We are slower and less deployed than, I think, 15 or 18 countries.

We also are beginning to strain at capacity. And so I think that all the efforts to free up spectrum, the efforts that I think should be mandated for the widest broadband coverage, is mandatory.

One way or the other, it will get solved. It would be nice if, in fact, enough spectrum is offered and enough bidders bid it up to whatever they think is a fair going rate, and then they bash each other in competition, for which there is relatively little right now. And the potential then is for transmission rates to be lowered, which would be a good thing.

Senator THUNE. Yes. And you mentioned, Mr. Diller, in your testimony to your prepared statement anyway, you talked about broadband being ubiquitous. And as somebody who represents a rural area, there are places in the country where that's not true. And I think of the reservations, for example, in South Dakota, and thinking about, you know, what efforts we need to make to make sure that we're including rural Americans in these video business models of the future, because there clearly is a—I know it seems like it's ubiquitous to many of us who live in places where you have access to it, but there are a lot of places that don't.

I had a question having to do with this issue of cord shaving. Mr. Westlake, you mentioned that in your prepared testimony, where consumers elect to just have basic cable service and supplement their service with a subscription to Netflix. It seems like there are a lot of content providers that are going to have an opportunity to sell their content directly to the consumer, which would allow them to bypass cable subscriptions.

And yet many, if not all, of the current online streaming models require you to have a cable subscription. For example, you can't watch ESPN or HBO on your iPad, unless you've got a cable subscription. Your cable provider has acquired the licensing rights to stream it. What is stopping ESPN from simply selling their content directly to the consumer or the NFL, for that matter, to sell directly to the consumer?

Mr. WESTLAKE. You mean—

Senator THUNE. You mentioned it.

Mr. WESTLAKE. Yes, in terms of each of these companies of course, can make a decision whether they choose to sell directly to the consumer. If what you mean is do I know of any impediment, there are no impediments. It's more a business decision that they make.

Some of these services are, in fact, selling directly as well as on an authenticated basis. So it's really purely a business decision on their part. Some have and some haven't. And I would expect, over the course of time, there will be more services that are offered directly to the consumer.

Mr. DILLER. Simply, Senator, it would be insane for ESPN to sell itself directly to consumers, because, right now, it's selling itself to me. I don't watch ESPN. I pay God knows what for cable transmission, and I am, therefore, paying for ESPN, because 100 percent of subscribers have to pay for it. So to sell it individually would be something they would avoid.

Senator THUNE. All right. Thank you.

Mr. Chairman, my time has expired. Thank you all.
 The CHAIRMAN. Thank you very much.
 Senator Warner.

**STATEMENT OF HON. MARK WARNER,
 U.S. SENATOR FROM VIRGINIA**

Senator WARNER. Thank you, Mr. Chairman, and thank you for holding this hearing.

I missed part of Mr. Diller's testimony, but I understand he said that incumbents always want to protect themselves and we need more disruption, and I agree. My background's on the telecom side.

But I'm trying to get my head around this whole new model where we've got, on one hand, we have the content generators. In the traditional model, we had, you know, broadcasters and/or cable, others, which then had some level of public obligation, because they either got that free license or they negotiated with the local community.

So we've got this kind of how you do a distribution through either cable, over the air or broadband network providers. And we've kind of got this new entity, not so much Ms. Whiting, from Nielsen, but everyone else, of you all kind of being, in many ways, in between the content creator and the distribution system.

And I guess the question I have for you all is we have placed in the past either kind of program access rules or other responsibilities on the network providers, some restrictions or rules around the content entities.

What should be kind of the policy ramifications for you all? What set of rules? And should we get to the notion of how do we define—what Senator DeMint was getting at you was whether a distribution network or trying to put you in a traditional box, but what should your obligation be and what policy restrictions framework should we put around you all? I'm not sure that's a very clear question, but let me have you take a crack at it.

Mr. MISENER. Well, Senator, if I may, I think vigilance is due most in the areas where there's the least competition, and so, at present, there are a plethora of content creators, of content distributors and certainly consumers.

But there also are not many conduits by which the content can get from producer and provider to consumer, and so that's the area I believe requires the most vigilance. And, in this context, maintaining an open Internet is crucial to the provision of these competitive services and the consumer choice that I believe we all agree is the right policy.

Mr. DILLER. Senator, I think that, not to be presumptuous, but I think you've got to rewrite the communications act of 1996. It's overdue, given the Internet, which—and it needs revision because the rules started with broadcasting 80 years ago, but the rules that essentially protected broadcasters and then the rules that enabled cable television, there is a new entrant. That new entrant, and it's a healthy entrant, is the Internet.

And so I think the rules now need to reflect that there is a potential positive competitor to what has become, as you stated earlier, a very closed system of program content makers, people who organize networks, whether they be pay networks or whether they are

advertising-supported networks and subscriber-supported networks, rather than, quote, you know, pay-per-view.

But these players actually are in a system where there's no air, and there's no air because it's completely closed, dominated by relatively few companies, less than a handful, and I don't think those companies are going away. My goal in life is not to make them disappear, but I think the Internet allows for competition.

Senator WARNER. But let me just ask you this, because my time's going to run out.

Mr. DILLER. Sorry.

Senator WARNER. No, I just feel like I agree with Senator Thune. We've got to push more access. We've got to push more conduits.

But, then, what obligation should you have as the intermediary between the content creator and the distribution system? What obligation should you have in terms of providing equal access, paying for the amount of content you push through these pipes? And should we be distinguishing between traditional sources, cable, broadcast, wired, wireless through all these, should we kind of have a total level playing field? And my time's up.

Mr. DILLER. Well, I would just simply say a level playing field is mandatory, and that means that the rights and obligations that people have are across all of these arenas. Absolutely. But, by the way, right now, the profit margins on data transmission are in the 90s. So it's not exactly as if these systems are not going to be built out. They are being, and they're being added to every hour. So I don't think you have any worries about that.

Mr. WESTLAKE. Senator, I would just add, the greatest innovation we've seen in the last couple of years has been from those that are utilizing broadband online video delivery, bar none.

Access to the broadband and the reach of broadband is the essential part. I don't find that we have an issue of getting access to the content. In fact, the most profoundly different content is coming from those who are utilizing that means.

Wide access to it, essential. That is essential, but the creation of the content is growing exponentially, both the volume of it as well as the innovation behind it.

The CHAIRMAN. Senator Klobuchar, to be followed by Senator Heller and Senator Kerry.

**STATEMENT OF HON. AMY KLOBUCHAR,
U.S. SENATOR FROM MINNESOTA**

Senator KLOBUCHAR. Thank you very much. Thank you, Mr. Chairman, for holding this hearing.

I wanted to follow up just quickly first with what Senator Thune had referred to, rural America, and I think you all know the FCC National Broadband Plan talks about getting broadband, including web pages, photos, video, to everyone. Yet, often, the speeds aren't as fast in the rural areas. And could you talk, maybe one of the three of you that provide these services, about how you're working to make your deliver systems more available to rural America?

Mr. WESTLAKE. Senator, well, we are a platform company. We don't actually deliver broadband to the end point. We're dependent upon that essentially as the consumer is.

Senator KLOBUCHAR. I understand.

Mr. WESTLAKE. We are certainly, as I said in my opening remarks, encouraging wider access to that at the FCC for megged-down minimum threshold, because, at that point, we feel, in terms of both what we can deliver in terms of high-quality video, high-def quality video, that suits the needs that we have as far as giving those consumers what they need.

But as far as actually being able to facilitate that pipe out to the home, that's not a business we're in.

Mr. MISENER. Senator.

Senator KLOBUCHAR. Mr. Misener.

Mr. MISENER. Thank you very much, Senator. We believe we're helping to provide the value proposition for the buildout of that broadband. The very fact that 120,000 movies and TV episodes already are available from a service like Amazon Instant Video makes it more valuable for consumers. And so the consumer demand will drive the buildout of broadband.

Certainly, that's an area of important policy oversight from this committee and from the commission. I'm a big believer in that, but rural areas especially will benefit from Internet video.

Senator KLOBUCHAR. And there's an article today in the *Washington Post* pointing out the 1934 Telecom Act was ensuring programming for rich and poor alike. How about the disparity issue in terms of equal access to low-income households? How do you think that fits into this, as more and more people are going to be getting their news in other ways?

Mr. DILLER. Well, I would say that access is going to be increasingly available as the broadband infrastructure not only becomes completely ubiquitous, but also has enough price competition to allow it to be available.

I think that what the FCC is doing is, I mean, in terms of using the old telecom funds to finance buildouts in rural areas, et cetera, for broadband is great. But I think we do need a national policy for broadband, because everyone is going to be affected by it and we're going to need to have as good a system as there is in the world, and right now, we don't.

Senator KLOBUCHAR. And what do you see as the role for local news? In our state, the local news is provided through, you know, getting people through tornados, to the flooding in Fargo-Moorhead, literally daily reports of where people should go, what's happening. What's the role of local news as you see the video marketplace maturing?

Mr. DILLER. I've always thought, as people said that local broadcasting, local television stations were going to be outmoded and were probably, in all of these new development areas, are going to be antiquity, and I've always felt otherwise, because the strongest local television stations are the ones that provide the most news and information and community programming, and so I think that continues to be very vibrant.

And, clearly, if you look at the success of any television station in any market, they are more dependent upon their ability to deliver news than they are having to hit a television program of the moment.

Mr. WESTLAKE. Senator, I find that, based on just viewing in the greater Seattle area where two of us live, or, actually, I guess you

work for one. I live in Seattle, the local stations are utilizing online now for a depth of local news that isn't practical on air. So there is barely 10 minutes that goes by in a broadcast of a local independent or affiliate station that does not refer to their website for more in-depth video footage, et cetera.

So, actually, I agree, local content remains, for most consumers, first and foremost where they go as opposed to just a broader national feed. And the local stations, on the whole, I think we're seeing just the beginning of it. I think you will see those local stations actually adapt to these video apps that others are doing and it will only proliferate.

Senator KLOBUCHAR. Ms. Whiting, I just had one last quick question. I was just looking at your gender breakdown, always a good topic to end on, on the digital consumer. So you have the TV viewers, 51 men to 49 women watch more TV. Is this right? I didn't know that.

And that online women beat out men 53-47 for videos, 54-46 for social networks, 50-50 for smart phones, and the tablet owners are the only categories where the men are ahead, 53-47. So do you see that changing as well, or where do you see that going?

Ms. WHITING. No, I don't see that changing.

Senator KLOBUCHAR. Why is that?

Ms. WHITING. Because, well, actually, we see very broad distribution of video in the usage on every device. If you mean do I think the tablet disparity—

Senator KLOBUCHAR. Yes, I was just curious where that's the one where the men are—

Ms. WHITING. Oh, no. Yes, I think that's just been, yes, he's got an example of—

Senator KLOBUCHAR. Yes, I know, there's a man up there with a tablet.

[Laughter.]

Ms. WHITING. No, I think that is mainly because it's a newer device, yes.

[Laughter.]

Senator KLOBUCHAR. And the women are just like they wait more to make sure they work—

Ms. WHITING. Well, I was going to start, actually, my testimony with my iPad and my BlackBerry and my iPhone and my PC, but I didn't do that. But I do think that's just a timing issue of the distribution of the devices.

Senator KLOBUCHAR. It's interesting. All right. Thank you very much.

The CHAIRMAN. Thank you, Senator Klobuchar.
Senator Heller.

**STATEMENT OF HON. DEAN HELLER,
U.S. SENATOR FROM NEVADA**

Senator HELLER. Thank you, Mr. Chairman. Thanks for holding this hearing today.

And I want to thank the panel for being here. It's enlightening to hear your comments. I know we ask a lot of questions. We just do it in a different way. It's usually the same question, just asked

a little bit different, and I assure you that my question probably runs right down that line.

But I would hope that we have more hearings like this, Mr. Chairman. In fact, I would hope that we talk about the communications act a little bit more and the cable act and some of these issues.

In fact, I would respectfully ask in the near future that we hold an oversight hearing on the FCC and discuss some reforms that I've introduced. So that would be my request.

I would also like to submit a statement for the record, if that's OK, Mr. Chairman.

The CHAIRMAN. It is included.

Senator HELLER. Thank you.

[The prepared statement of Senator Heller follows:]

PREPARED STATEMENT OF HON. DEAN HELLER, U.S. SENATOR FROM NEVADA

Thank you, Mr. Chairman, for holding this hearing today. I am appreciative of the time we are spending to listen to our panel on the future of content distribution. I hope that we have more hearings on this issue going forward and I would also like to respectfully ask that in the near future we can hold an oversight hearing on the FCC and discuss some reforms that I have introduced.

I believe that today is the start of a conversation on content viewership in America. I would like to thank our panelists here and I look forward to studying your comments.

Like all of you, I have marveled at the technological advancements and innovations that have taken place over the last fifteen years. An unregulated Internet market has been a dynamic force for our economy, creating many sustainable well-paying jobs in America.

With these advancements have come faster video streaming technology that allows multiple family members to sit in the same room and watch four different shows on different devices while checking their Facebook status and reading *The Hunger Games* online. And, if you don't believe me, you are welcome to stop by my house at Christmas.

These advancements also beg the question of whether the laws passed in the 20th century are outdated in relation to today's changing landscape.

That is why Congress should look at the laws regulating content distributors that are on the books and determine what makes sense and what does not for a world with a participant who is unregulated.

They should do this while remembering that content should be protected and compensated accordingly.

But, focusing on the laws on the books is also a discussion for another day. Today I am hopeful that our panelists can provide us with an outlook of where we may be headed with content distribution and perhaps what consumers may expect around the corner.

Thank you again, Mr. Chairman.

Senator HELLER. Like all of you, I marvel at the technological advancements and innovations that have taken place over the last 15 years. An unregulated Internet market has been a dynamic force and it's created many substantial and well-paying jobs abroad and, of course, in the state of Nevada. These advancements beg the question of whether the laws passed in the twentieth century are outdated in relation to today's changing landscape.

That's why Congress should look at the laws regulating content distributors that are on the books and determine what makes sense and what does not for a world with a participant who is unregulated. They should do this while remembering that content should be protected and compensated accordingly. But focusing on the laws on the books is also a discussion for another day.

Today, I'm hopeful that our panelists can provide us with an outlook of where we may be headed with content distribution and perhaps what consumers may expect around the corner.

I'll tell you one of the great benefits of being a Senator from Nevada is to tout the conventions that come to my state, such as the Consumer Electronics Show and a recent convention held by the National Association of Broadcasters.

These gatherings are always informative because they showcase what's coming down the pike from innovators for consumers. Knowing where we're going is helpful to me because the last thing that I want to do as a lawmaker is to stifle that innovation.

So with that in mind, I'd like to ask the panel a kind of an open question to all of you in regards to viewing content. Where do you think we're going? And do the laws in existence help or hurt us from getting there? Mr. Diller, I'll start with you.

Mr. DILLER. Well, I said it earlier—

Senator HELLER. I said we were going to ask questions.

Mr. DILLER. Oh, no, no. I expect that, Senator, but I think that where we're going is obvious. We have a new, radical revolution in communications called the Internet. And so more is going to transfer, not completely, but more is going to utilize the capacity of the Internet to provide more information, more services, more programming. And the laws we have, that 1996 communication act, do not address the reality of this new force that has only been really going on since 1995.

Ms. WHITING. Senator, I would probably add a couple of things. We see a trend of people using multiple media multiple devices simultaneously. So, one, more people watch television while they're using their tablet or their PC or their phone, which only leads to the need for more, as we were talking about, broadband, because many of those applications are like that.

So we see more multitasking. We see people wanting access to their favorite programs, their favorite content, their news and information wherever they are, and, again, on the best device possible, wherever that is.

But as phones, in particular, smart phones also have wider and wider penetration, you know, that device really is a video device for any of the different kinds of content we're talking about. So I think that increases as well.

So they complement each other. People are using multiple media at the same time, and that will grow. So those are the big trends we see in the next couple of years.

All the innovation everyone else is talking about I leave to the experts about that.

Senator HELLER. Sounds like you're an expert.

Mr. MISENER. She is.

Senator, the distinctions drawn among different communications services in the 1996 Act, in the 1934 Act before, the 1992 Cable Act, those distinctions have blurred significantly over the past decade or so.

And I'd be happy to work closely with the Committee to address that blurring and to see if perhaps there are ways we ought to update the law to reflect the business models in technology that exist today.

Senator HELLER. Thank you. My time has run out, Mr. Chairman. Apologize, Mr. Westlake.

The CHAIRMAN. You do not have to apologize ever for 29 seconds in this committee.

Senator Kerry, then Senator Pryor.

**STATEMENT OF HON. JOHN F. KERRY,
U.S. SENATOR FROM MASSACHUSETTS**

Senator KERRY. Thank you, Mr. Chairman.

Indeed, the lines are blurred. In fact, it's pretty unclear right now where a lot of jurisdictions begin and where they end, and I think we're way behind the curve.

Ironically, and I've said this before with the Chairman here, and as Chairman of the Subcommittee, I've said that we were really behind the curve within 6 months of the 1996 bill being signed, because we didn't really think very hard about data transmission.

So a hearing like this is pretty important as we think about what's the role of government in the market going forward. And, hopefully, it'll help us understand how free Americans are to really engage in the creation and consumption of video in fair terms at fair prices, as well as the role that competition is going to play in those choices. And I don't think we've tapped the answer to that yet, to be honest with you.

I mean, you mentioned it a moment ago, Ms. Whiting, that the four-apparatus experience you live, and some people may even have more, it's pretty normal, actually, for people to be doing that nowadays.

And there's nobody here who doesn't understand the ways in which the digital technologies have shaped the video landscape, from YouTube, Amazon Instant Video, Facebook, Netflix, and many others, have now made it possible for Hollywood to distribute television and movies over the Internet, for the rest of us to produce and distribute our own video, from the sort of innocuous and silly and personal, family oriented, kid-oriented kinds of things to the Joseph Kony video, which had profound impact and a stunning over 80-million-plus whatever hits in a short period of time.

And, now, the smartphone and the tablet folks who make it possible for people to capture video, not just on your television or your computer, but anytime, anywhere. So it's a brave new world. It's a whole new deal.

And most of these services are riding on either the wired or the wireless investments of a group of companies—the satellite, cable, telephone folks. And, now, they're using their broadband capabilities to put content out in new ways, such as the Comcast, Microsoft Xbox setup.

So a lot of us are sitting here trying to figure out, OK, what are the principles that ought to guide us going forward. And, Mr. Chairman, I think it's critical that whatever we do we help to grow and empower and enable this innovation.

That means, on the wireless side, that we have to do a better job of managing and releasing the spectrum, because video takes up a heck of a lot more bandwidth.

On the wired side, we need to be pushing out broadband networks to underserved regions. Still a problem here. And, Mr.

Chairman, you and I have talked about this, and the Committee has had hearings before on it. We've had policies put in place.

I think President Bush, way back in 2003 or so, said we're going to have a policy that had everybody in America wired, and, as we all know, we're just light years behind that, in fact, dropping behind other countries, which we really ought to take note of.

I mean, if you want to talk about American competition and pre-eminence in the marketplace, it's going to be dictated, largely, by some of this, and we're not doing what we need to do, by any sense of the imagination.

Finally, I'd just say, and these are sort of part of the opening comments I wanted to make earlier, Mr. Chairman, but we have to protect net neutrality, I believe, and that's critical as we approach this, and we fought back against one effort here in the Senate to undo that.

So I remain very committed, as the Chair of the Subcommittee, working with my full Chair to make sure that we enhance this marketplace as we go forward, and, frankly, make a little sense out of it, because I think consumers are bouncing off the walls right now, in some ways. In other ways, they're benefiting just enormously through the increased access and different appliances, and we have to be careful not to nip that because of its power in the marketplace.

So let me ask you a couple of questions, if I can. One, I might ask Mr. Diller, given your success in the marketplace in a number of different venues and the knowledge you have of this, what would prevent you from, say, going out and creating now your own sort of Fox Network or some network, any other name you could attribute to it, but exclusively—

Mr. DILLER. I think I would pick a new name.

Senator KERRY. Well, pick a new name. But your own network.

Mr. DILLER. Yes.

Senator KERRY. Your own individual network outside of the broadcast or the cable world and just distribute it purely on the Internet?

Mr. DILLER. Absolutely nothing.

Senator KERRY. Doable.

Mr. DILLER. Yes. The wonderful thing about this miracle of the Internet is you literally get to make up whatever you want, press a send button and publish to the world without anybody between your effort and the consumer. So it gives you an absolutely open possibility to create anything.

Now, we're at a very early stage. We've only had video for a few years, the ability to transmit rich pictures over the Internet. And there's no question in my mind that as time goes on and systems for consumers get used to, to the same degree that they're used to the one click on Amazon, so that if you have something you can offer it to someone in a payment system that they'll understand and easily be able to access, and so this will happen over time. It is the promise of à la carte programming that I think is probably the greatest opportunity that there is.

Senator KERRY. And in that context, we don't have a cable or broadcast representation to answer this, but do they have an incentive, therefore, to try to limit the growth of online alternatives?

Mr. Misener.

Mr. MISENER. Thank you, Senator. I can't speak for them, obviously, but we've seen indications that they may wish to restrict the availability of competing content, and that has to be monitored vigilantly, I believe, by the Commission and this committee.

Senator KERRY. And Congress should probably look pretty carefully at that playing field, shouldn't it?

Mr. MISENER. Yes, sir.

Senator KERRY. To make sure there's fair access and competition.

Mr. MISENER. Yes, sir. And if I may suggest, at Amazon, we start with our customers and work backward and try to figure out what they would want. And so, in this context, in Congress' role, to look at the citizen consumer and then work backward from that, what would they want.

I believe that they would want as much choice, as much selection, the greatest value and the greatest convenience possible. And as we look at the telecommunications laws as they exist today, try to put ourselves in the shoes of the citizen consumer and see what they would want, rather than what the industries do.

Senator KERRY. I want to ask this of both Mr. Diller and Mr. Misener, how critical is net neutrality to this ability to distribute and to develop in this sort of way that you've described?

Mr. DILLER. I would say it's at parity with the need for national broadband policy that gets us to be, if not number one, I wouldn't settle for less than number two. We are now number 18, I think.

Senator KERRY. Something like that, 16, 18.

Mr. DILLER. Net neutrality is mandatory, because there is no question that without it you will see the absolute crushing of any competitive force. It's just not going to be possible if you say that distributors can put tin cans and anchors around anyone that wants to deliver programming that they don't own, those distributors. And since we have a universe today where there are very few distributors, that's not a good thing.

Senator KERRY. Mr. Misener, do you agree with that? You don't have to get a line in.

Mr. MISENER. I'm confident that I could not have said it better.

Senator KERRY. OK. Final question, if I may. As we all know, hundreds of thousands of movies are illegally downloaded every day. One could block that by preventing people from getting to sites that stream the video, but I don't think anybody, obviously, wants to impede the freedom to go where you want to go.

So, then, the question is asked or begged is there, in the current copyright and proposed copyright law both civil and criminal, too little protection for traditional video creation and too much constraint on innovation or is the balance right, and should we simply enforce the protection in this new era? Where do we come out on that?

Mr. MISENER. We're in the business of selling legitimate product, and thus we fundamentally abhor piracy. And so we're concerned, of course, about the prevalence of piracy in some places around the world. And so if there are ways to get at those kinds of copyright protection issues more effectively, we certainly would support that, Senator.

Mr. DILLER. I think copyright protection works pretty well right now. I do think some strengthening, particularly outside the United States, would be very helpful. I did not think that SOPA was good legislation, because I thought it was a ridiculous overreach. But current law is fine, hopefully enhanced somewhat.

Senator KERRY. Well, this is something we obviously need to follow up on. There are a whole lot of sidebar issues to each of the questions I asked, and we look forward to working with you all closely as we work through this, and, hopefully, can make sense out of it, Mr. Chairman. Thank you.

The CHAIRMAN. Thank you, Senator Kerry.
Senator Pryor.

**STATEMENT OF HON. MARK PRYOR,
U.S. SENATOR FROM ARKANSAS**

Senator PRYOR. Thank you, Mr. Chairman, and thank you for having this hearing. It has been great.

Mr. Diller, if I can start with you. I know that when Senator Kerry, a few moments ago, asked you about what is there to prevent you to start your own thing on the Internet is absolutely nothing. You've obviously excited about that, and it is exciting.

But I also have a question about regulation and what regulatory environment you think there should be out there. For example, we recently passed, I guess it was last year, the Twenty-First Century Communications Video Accessibility Act, which makes sure that certain devices that aren't covered by previous law, the handicapped could have access to those.

And, you know, one of those examples that we gave was when folks were watching a movie, say, like the *Wizard of Oz* online, it doesn't have to be closed captioned, but, obviously, on television, it is.

So those are regulations that don't necessarily infringe much, but they do make this access available to everybody.

So if you look at something like today like an Xbox 360, I don't think it is covered under our new Act. As far as I know, it's not. Maybe it should be, but I think that technology has changed so rapidly we've not been able to keep up.

So what's the balance there in this—I would call it legacy regulation? You're very comfortable with all kinds of regulations, given your background. What's the balance there as we move forward and as we're doing more and more online? How much regulation should there be and how equal should those playing fields be?

Mr. DILLER. Well, I think that regulation should be relatively light touch, but I think that given this very powerful mass communications, the engines of such, there has got to be, first of all, the levelest playing field that can be legislated.

At the same time, there are all sorts of legacy obligations that broadcasters took on, that cable companies took on and satellite companies took on that should now be covered and included with the Internet and the issues of the Internet.

I don't think it's that hard to do. I mean, the last time around, the 1996 Act took a lot of plot and preparation and endless noises heard from. Not that that's not going to happen again, but I actually think this time around it's easier.

And the reason it's easier is because the Internet and its ubiquity and its adoption has changed so many things naturally that amending the act for the future that includes the Internet, the reality of the Internet, I don't think is going to be that problematic.

Senator PRYOR. Did the other panelists have any comments on that, any response?

Mr. WESTLAKE. Senator, you mentioned the Xbox. I'll respond on that. We are working toward the implementation of closed captioning. It's a complex undertaking. The volume of content that is flowing and the amount of metadata that's associated with the closed captioning is no small task, but that is certainly our goal and one that we treat very seriously.

Senator PRYOR. Good. Anybody else?

Let me ask this question about something that Senator Kerry alluded to a minute ago and that's intellectual property, and it does seem to me that given the ubiquity of the Internet, as you said, it just becomes harder and harder and harder for folks who own that intellectual property to enforce that.

And do the same old rules apply or should the Congress, should specifically the Commerce Committee be considering other approaches to make sure that folks get their intellectual property protected both domestically and abroad? Anybody?

Mr. MISENER. Senator, if I may. Thank you. At Amazon, we've been working with rights holders, since our inception, to ensure that their legitimate product is made available to the widest range of consumers, and, likewise, for our customers that we provide them the legitimate product.

And so the 120,000 videos that I've referred to, available in Amazon Instant Video and on Kindle Fire, those were all obtained by working with the rights holders. So we're very comfortable continuing to work with them to respect their intellectual property rights.

Senator PRYOR. Good. And one last question, if I may, for Ms. Whiting from Nielsen, I know you look at all this data all the time. You see what people are doing and see how they're behaving out there.

One of the things that this committee has been working on is trying to get high quality broadband to every American that wants it and it's particularly challenging in rural areas. Do you think that as more and more content is available online that it will actually incentivize people to get broadband, especially in the rural areas?

Ms. WHITING. I think it just seems like a logical conclusion because so much of what you could talk about and experience every day, the applications that are useful, you know, the way you can communicate, the way you can learn and get your entertainment being available, particularly on a phone, as I said before, I think will lead to more people asking for broadband and requiring that access. So that usually leads to a commercial discussion about making it available.

Senator PRYOR. And then that's going to lead to the issue of affordability for broadband and trying to get it deployed. But one of the concerns I think this committee has expressed over and over is, we don't want two Americas. We don't want urban to have all

the latest and greatest and high-tech stuff, and then rural just be left behind.

So all right. Well, thank you very much.

Mr. WESTLAKE. Senator, I would add that the offering of all this additional video, which really requires that broadband capability, which I mentioned before as far as the four-meg threshold that the FCC has stipulated, my impression in dealing with these various ISP, Internet service providers, is they are looking for new ways to be able to offer broadband to more households and to be able to sell it.

It is, frankly, a good margin business, and as people see more and more of this content, the demand goes up. And, as typically occurs with most businesses, when demand rises, businesses typically see that void and try to fill it.

So I actually think that this increase in video content may well be a catalyst for many to build more. We hope so.

Senator PRYOR. Thank you.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Pryor.

Senator Nelson.

**STATEMENT OF HON. BILL NELSON,
U.S. SENATOR FROM FLORIDA**

Senator NELSON. Thank you, Mr. Chairman.

Of course, Senator Pryor, you've been such a champion for rural America, and, as you know, the fruits of your labors in getting broadband, the fruits of the Chairman's labors in getting broadband out into the rural areas have helped my state enormously as well, as a lot of people don't think of Florida as being rural, but there are vast portions of Florida that are rural.

And I might say, having done a number of town hall meetings in the rural parts of the state, now that, as a result of the stimulus bill having put money into expanding broadband into the rural areas, which is now just occurring, that is being greeted with exceptional excitement and approval among the rural areas, so that, basically, as you say, that we don't have two Americas, that the children in rural America have the same access to the information that children in urban America do.

I wanted to ask a question of Ms. Whiting, because I was fascinated the other day when a senior member of our staff said to me that she does not watch television anymore, that she gets all of her information, basically, from either her computer or from her iPad.

So how in the world is Nielsen, which has now refined the technique so well in determining how many eyeballs are watching a TV set with your boxes, your electronic boxes, now that measure it exactly, how in the world is Nielsen adapting to determine how many eyeballs are watching content on the Internet?

Ms. WHITING. Thank you for the question, Senator Nelson. We've obviously had to adapt, because, as we just talked about, if we want to follow the audience of a program across any screen, the TV, the PC, the phone, the iPad soon, any websites, we have to measure that, and we do that for both the programmers and adver-

tisers, and so we use technology to do that. We recruit samples of consumers who let us measure that.

There are a growing number of people who do not own—there are contradictions going on. There is a small, younger, generally, group of people who do not own a TV set. They tend to have a smartphone, not a landline, and they're getting their content and their information that way. And you balance that with households that now have four TV sets and their PCs and every other device.

And our task, because programmers and advertisers really require it, is to measure the programming across that. And so technology is our friend here. Without giving a long explanation, we use technology to help us measure, with permission, the behavior on all those screens in samples of people.

So it's possible and we're doing it, and I expect we'll have to continue to innovate, because there'll just be more screens.

Senator NELSON. Well, technology refined your technique with regard to television screens, because you could put a box on a representative sample and then determine who was watching what program. How do you do that with a handheld computer device?

Ms. WHITING. So very specifically, it's usually a software application that we basically recruit someone to participate. We download either a software application or we're measuring a commercial or a program and there's a code in the commercial and program and we pick it up if you're part—basically, it's code recognition. So it's technology that's residing on whatever the equipment is. Whether it's a phone or a PC or, soon, your iPad, we use software. So it's not a separate box that's connected. It's a way of understanding behavior, with your permission.

Senator NELSON. How do advertisers understand that they are being charged appropriately on the Internet as compared to the satisfaction and confidence that they have in the number of eyeballs that are watching a TV program because of you?

How are they being satisfied that they're being accurately charged a fee for their advertising on the Internet or any way that it's distributed through an Internet-type program?

Ms. WHITING. So the really simple measures advertisers are looking for, you know, how many people or what exposure did my ad have. They have estimates for television. There are a number of different ways they can get those estimates for online display ads. Search advertising they get feedback, and we provide it, other companies do.

The number one question we're getting now from major advertisers is to understand, across the screens, how an ad campaign can be effective, how to balance the money they put in.

And so that's, again, done recruiting panels, using technology to measure, same kind of way we do in television, exposure to an ad, and then there's the effectiveness. But there are many ways, because you have website information, you have other technology, that people can do that.

So we have similar methods to television, similar answers for advertisers, and the big question that's happening is trying to understand how they complement each other, an ad on TV and an ad on the Internet.

Senator NELSON. If I use myself as an example, a TV program goes dark, and an ad comes up. Now, maybe my mind is watching it or not, but that's what's filling the space. Not so with an Internet screen. I may be looking at content on the screen on an iPad and there's an adjacent ad, but I'm not paying any attention to that. How do you go about measuring the effectiveness of that compared to a TV program?

Ms. WHITING. So we actually use a method that involves both understanding that a panel we've recruited has that ad up and on the screen, and then recall, after the fact, and certain measures we create for recall and impact for that advertising for major advertisers.

So it's a combination of things along with demographic information we have. So we can say this ad was viewed by an estimate of, you know, men 18 to 49, and then, additionally, would look at the impact of the ad in the recall. And we do that for a number of major advertisers, many of them, in fact.

Senator NELSON. Do you find that the recall for Internet ads is much lower than the recall for TV ads?

Ms. WHITING. It depends on the creative. It depends on the placement, in other words, the actual ad, the placement.

What we do find is that ads that are shown on both television and the Internet have much higher recall and much higher effectiveness when they're combined. So that's something that many advertisers are studying with interest. They complement each other.

Mr. WESTLAKE. Senator, I would add also that, to the point I made in my remarks about innovative business models and new offerings, that various content companies, which obviously use advertising as, in part, a way to fund the programming, are experimenting with ways of a lighter ad load, for example, shorter ads.

So, again, to my comment, out with the old, in some respect, the new way that online video is being delivered, it's not just the means by which the content is being delivered, but the way in which it's offered up as far as the price point for the access to the content, how the ads are delivered up, pre-rolls, it's called, where you watch an ad before.

So there are a number of things that are being done, putting aside the actual measurement, which is a separate discussion and not my expertise, that's being utilized, and some refining it, from what we hear, extremely effective.

Senator NELSON. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Nelson.

I'm going to ask the final question, there being nobody left, and so I'll have to roll several into it.

Ms. Whiting, the way you answered Senator Pryor's question was very interesting, because you really hesitated when you talked about the effect of technology leading to rural coverage. You had an answer, but it was a while in coming, and I thought that was honest, and I happen to agree with that.

The business of when rural state senators talk about rural people or poor people in far-off places and people say, "Oh, well, they're just, you know, pandering to their constituency," is really not at all the case.

This is a basic American precept, and Mr. Diller has said that a number of times. You've all said it, everything has to go to every-

body. And that's such a fundamentally American concept, and it's also a concept which is so probable, can be probable, with this proliferation of platforms and delivery areas.

However, I think this committee has done a very good job in three areas of all this, and that is we started the E-Rate. Houston went wireless the second day and every classroom was done on the third day. Others didn't do that, and so it was a much longer process, but, now, E-Rate has worked. Connectivity is always a starting point.

I think we've pushed real hard on, as Senator Nelson said, broadband, and through the stimulus package, which some people say, "I never want to see the likes of that again." And therein lies a problem, because what we have done in broadband, as a matter of public policy, may have reached its point of no return.

Then, I think we've done also a very good job in wireless, put a lot of money into wireless. On the other hand, we haven't done that by ourselves. Obviously, others have done it.

But with all of these things going on, all I can think of when I hear about rural America, and I'm going to think about the rural part of Florida, not the rural part of West Virginia, just for the moment, so that I appear to be more honest in my questioning, and that is that, for the most part, it has been the business of the telecommunications companies up until now.

And there's always this wonderful thing, because there are lots of mergers, and so there are lots of conditions, and the conditions always include precisely that, you've got to go everywhere, cover everybody.

And all of the telephone companies that have ruled over West Virginia over the years, they've all promised it and then none of them have done anything about it.

Yes, they've incrementally moved things further, but if you talk about mine disasters, if you talk about driving down any interstate in West Virginia, you have to kind of memorize the places where the interstate rises high enough so that you have cell service, which is absolutely humiliating and embarrassing in a modern world. That's our world. That's our world. That's rural America's world.

And so I am on fire on the business of whether we are going to have this explosion of technologies, which I welcome, I totally welcome, and I welcome for several reasons. One is that I think this explosion of technology and capacity to see, learn, listen, and watch may be the salvation of the older generation, because you read so much about people being alone and they don't have friends and they can't communicate. Well, all of a sudden, they have all the friends in the entire world. They can make 25 friends every single hour if they want to.

But the problem is they sort of have to have children in their household, but most of them don't. So that whole problem of how is it that they come to the marvels of this new way of watching, learning, going back to twelfth century British history and finding out marvels of how people actually built cathedrals back then—the stonemason process—how could they do it. I mean, it's all interesting stuff. It's exactly the kind of thing which keep them company, keep them motivated.

And then the whole news factor, when they get to the news factor, I also have a big problem and question because news outlets are diminishing. I think there's one AP person left in Charleston, West Virginia, which is our largest city, and capital.

And newspapers are getting smaller. The *Post* is getting easier and faster to read, as is the *Times*. That is slightly less, the *Times*, a little bit less quickly. And television increases, and news is now gotcha, and local news is a little bit less than CNN and MSNBC and Fox, et cetera, but it's still that nature, and then local broadcast has some of the same. So I worry about those things greatly.

But what I worry most about is access to this, that we're talking here an exciting, marvelous, technologically proficient, slick, but profoundly important and right development.

I'm a true believer in net neutrality. I want everything to go out to everybody. I don't want anybody stopping anything. We haven't really dealt with caps here, because, at some point, you can't create spectrum, and you can buy it back or give it back and then the FCC can sell you some. But, you know, the streaming, as Bill Nelson pointed out, eats up a lot of megabits really, really fast.

So my question to you is, having neatly wrapped all my complaints into that, what's going to happen in this new revolution, which is going to force not just the telecommunications companies, but others who are in the game now to get it out to people who are not asking for it?

They're not asking for it. I don't believe they are. I think when they knew they could have it and then overcame their fear of doing it, and had access to getting it, we might start with connectivity at that. They can't go down to their local public library to do all of this stuff. There's a connection down there, connectivity, but I think that's going to be a really tough slot, but it is the classic American requirement of this new explosion of possibilities.

And I have absolutely no idea who I asked that question to, so I'll just ask it to Barry Diller.

Mr. DILLER. Thank you so much.

I think, just like long ago, phone companies were forced, that in return for their monopoly, that they had to connect to everyplace that existed.

The CHAIRMAN. But they didn't do it. None of them.

Mr. DILLER. Well, I don't know. They didn't—

The CHAIRMAN. No, they focused mostly on the interstates and went to the cities and where the business was and where the prosperity was, and they got all of that. So Fairmont and Morgantown, all those places are happy, but out where people mine coal, whatever you think of that, and in the rural parts where I live, where our farm is, you can't get anything.

Mr. DILLER. Well, I had thought phone coverage was pretty much everywhere. However, if it wasn't and it isn't, then it's replacement, to a large degree, which is wireless.

The CHAIRMAN. Right.

Mr. DILLER. And broadband, it should be the policy, I think, of this country that every place must have the ability to receive both wireless and broadband connectivity. And that ought to be our law. We cannot compete in the world with the sixteenth or eighteenth best communications infrastructure.

The CHAIRMAN. Now, you're talking more broadband than you are wireless.

Mr. DILLER. No, wireless as well. But by the way, you know, you speak about if you go too low in parts of West Virginia, I promise you if you drive around Los Angeles or New York City or Seattle, you're going to find lots of dropped calls. You're going to find lots of places where there's spotty coverage.

And I think that, again, we haven't had enough competition. We haven't had enough national policy that—

The CHAIRMAN. How does national policy do this? I mean, I'm meant to be in love with national policy, and I've seen these national policies, but it's always the people who have to make the money who decline to get it out there, because it's at the margins.

Mr. DILLER. We built a highway system in this country, which we did in the 1950s, I believe.

The CHAIRMAN. Right.

Mr. DILLER. That got done. Why is this so impossible for us to organize a system where it does get done?

The CHAIRMAN. Because that was an executive decision approved by the Congress in a much simpler time, and this is an explosion of technologies, which so many people are just barely holding onto by fingertips, particularly the more rural you get.

And inner city is the same thing. If it's not going to the inner city, that's the same complaint I would have.

Mr. DILLER. Sure.

The CHAIRMAN. So who's going to push this?

Mr. DILLER. I'm sitting here pushing it. My colleagues will push it. Most of the people in this room, I think, would push it.

I think you ask anybody, they'll say, Yes, we want competition in communication infrastructure. We want it to be universal. We want it to be the best in the world, and we'll support it.

The CHAIRMAN. But, Mr. Diller, do you understand what it feels like when you go to a place called Upper Big Branch somewhere in Raleigh County, and they've just had a big explosion at a Massey mine and 29 miners have been killed, but nobody's really quite sure of that yet.

So everybody's gathered around the portals, as close as they're allowed to get, and everybody is trying to dial their mother, their son, their grandmothers, et cetera, in Detroit and around West Virginia, and they cannot do it.

And charging up the road comes boatload after boatload of wireless poles from Verizon, because they're going to set them up. But you see what I mean? In other words, and any kind of a rural mishap.

Now, IT and healthcare are helping a lot on this, on that particular aspect, but the general availability and the accessibility remains very much on my mind and I worry about it.

Mr. DILLER. I sympathize.

The CHAIRMAN. Any concluding Aristotelian comments?

Mr. WESTLAKE. Mr. Chairman, I guess what I would weigh in with is that a balance is required because it is a combination of factors, like anything.

Certainly, most of these companies sitting at the table are benefited from the very notion of having wide distribution of broadband

on many levels, everything from the very basic, for us, of pushing out updates to our operating systems to the delivery of entertainment. So they're all essential. And the reason we supported the FCC position on net neutrality was because it was a balanced approach.

And I think, as you evaluate it, since we're down to the last, I don't know that I'll have the last word, but the last one of the closing thoughts is to balance those interests, because the companies that actually build, implement this, are in a better position than certainly I am or we are to address what all is involved, but it is really looking at that. It is a balancing act. And I think as we evaluated that, we realized just that, that you have to take into account the innovation opportunities, the delivery of content.

As I said before, I believe that as more high-speed content is delivered, I'd like to believe that there will be an incentive for the investment made to deliver that broadband, and it is essential for this country. And certainly agree with Mr. Diller and the rest of you that whether we're eighteenth, I know we're way down on the list and that is certainly something that, whether it's delivery of education, which is fundamental, all the way to the more mundane in relation to education, entertainment, it's essential, because this is where we are headed.

The CHAIRMAN. Right. Right. All right.

Senator NELSON. Mr. Chairman, may I make a corroborating comment?

The CHAIRMAN. Well, is there a possibility that you won't make a corroborating comment?

[Laughter.]

Senator NELSON. But you will be very happy if I do.

The CHAIRMAN. Of course I will. Of course I will.

Senator NELSON. I just want to say, if it's any consolation, the highest point in Florida is 350 feet, so not a lot of hills and valleys, and very spotty coverage.

But, as Mr. Diller says, in any urban area, it has crossed every one of our thoughts, you're in the middle of a very important cell-phone conversation and you lose it, and you wonder why don't they have this problem in Third World countries on this planet.

And I would just like to throw out a final thought that we need to consult with folks like this on what Congress should do in the updating of our video and communications laws, given the fact of the subject of this panel today.

Thank you.

The CHAIRMAN. You have been a superb panel, and many ideas have been thrown out, frustrations have been thrown out, and the opportunities are endless.

And so it really is the most exciting period in telecommunications and all of this since I came here, by definition, and so I congratulate you all for being a part of it and for being warriors in the War of the Roses.

This hearing is adjourned.

[Whereupon, at 12:08 p.m., the hearing was adjourned.]

A P P E N D I X

SYNCBAK
Marion, IA

Hon. JOHN D. ROCKEFELLER IV,
Chairman,
U.S. Senate Committee on Commerce, Science, and Transportation,
Washington, DC.

Dear Chairman Rockefeller:

Thank you for the opportunity to contribute to the Committee's important work in examining how disruptive technologies will affect the future of online video. I have a keen interest in the subject of this hearing. I have spent most of my career figuring out how we can use technology to make it easier for consumers to receive local broadcast television on new television distribution platforms.

I hold 19 patents related to distribution of broadcast content. The services I created in 1999, *Geneva* and *AntennaWeb*, are still used today, in all 50 states, by television stations, satellite television providers, and consumers. Neither of these attracted headlines when they were created. But they each deployed new technology that has helped tens of millions of people get local television over new platforms.

Today I run Syncbak, a media technology company I founded in 2009 to help consumers legally access live, local broadcast television over the Internet. Syncbak's Internet broadcast platform with underlying authentication technologies enable broadcasters and studios to distribute in real time live and on-demand content over the Internet to consumers in their homes and on mobile devices. We do this with inexpensive hardware that is installed in broadcast stations. The hardware inserts a special token inside a station's over-the-air signal. This hardware communicates with mobile and in-home technologies to authenticate viewers for broadcast content distributed over-the-top of the Internet. This guarantees that viewers can receive over the Internet only the content they can receive over-the-air. Let me explain why this step—authenticating viewers to receive broadcast content via the Internet—is so important.

As many Internet media companies know, collecting live television signals and re-transmitting them on the Internet is a relatively simple, inexpensive task that has been readily available for many years. However, very little live local television content is available on the Internet at present due to the complexities around distribution of broadcast TV. Simply put, the Internet is global and broadcast television is local. This means that local TV stations (who are, by and large, affiliated with a major broadcast network) can only distribute programming to households that can be reached by their over-the-air broadcast signal. To distribute live broadcast programming over the Internet, the same territorial exclusivity must be replicated to ensure appropriate compensation and protection of content owners (*e.g.*, the NFL and Disney Studios). Otherwise, content owners, and advertisers who underwrite distribution of content, cannot be assured that only viewers with the "rights" to receive or who have purchased the rights to receive their content in a particular market are viewing it. Syncbak's proprietary technologies and Internet TV platform protect these rights and enable viewers to watch television over the Internet on mobile phones and connected devices.

For example, in my hometown of Marion, Iowa (Cedar Rapids-Waterloo-Dubuque television market 89), KGAN is the local CBS affiliate. It has produced local news and been a CBS affiliate since before I was born. KGAN pays the CBS network for the right to carry live CBS programming in my market and it pays syndicators for the right to carry *Judge Judy* and other popular syndicated programs in my market. These exclusive rights are limited to a 65 mile radius, or as far as the KGAN broadcast signal can reliably reach.

The Cedar Rapids market is one of ten smaller local television markets surrounded by the much larger markets of St. Louis, Kansas City, Minneapolis and Chicago. In each one of those ten small markets and the four large ones, a different

station has the exclusive rights to live CBS programming and popular syndicated programs. Those exclusive rights allow stations to invest in and be responsive to their local communities. This model—a mix of local news and other local programming with exclusive local market rights to network and syndicated programming—has been the foundation of local television broadcasting for decades. Congress and the FCC have acknowledged many times how important territorial exclusivity of programming is to our system of local broadcasting. Without exclusive rights to network and syndicated programming, KGAN wouldn't be able to support the high cost of producing local news. I would have to get my "local" news from a much larger market, like Kansas City or even Chicago. Without market exclusivity, local news and other local television programming would disappear from all but the very largest television markets.

Respecting market exclusivity has presented technical obstacles in the past, as new systems of television distribution have developed. As cable and satellite television services developed it became possible for a station's signal to be carried outside of the areas in which that station had the rights to that programming. The technical challenge was not retransmitting the local broadcast signal on a cable or satellite system; it was making sure consumers got the signals of the stations that held the program rights in their local market.

This turned out to be a particularly thorny problem when DIRECTV and DISH launched "local in local" services starting about 12 years ago. As the CEO of the company that was then called Decisionmark, I created a technology that allowed DIRECTV and DISH to determine which households should receive which local signals. The *Geneva* technology I created then is still used today by satellite television providers, all major networks, and every local ABC, CBS, FOX and NBC affiliate.

In 1999, when Congress enacted SHVIA, satellite television was the frontier. Today, as the subject of this hearing recognizes, the frontier is Internet distribution. But in many ways the real technical challenges are the same. It's not streaming television content on the Internet; it is *protecting* television content on the Internet. The challenge lies in legally providing consumers with the live broadcast content they want on mobile and connected devices without undermining the foundation of broadcast localism and all of the public interest benefits and good jobs that come along with the package. That is the challenge that Syncbak overcomes.

It is inevitable and desirable that local broadcast television will be widely available via the Internet on connected devices. It is good for consumers and the entire television industry, from content owners and studios to broadcasters. However, content owners (including local broadcasters, networks and studios) must be protected with technology that can effectively limit Internet distribution of live TV content to local geographic areas. Syncbak, which is already operating in 38 markets on 54 TV stations, reaching nearly 25 million households, has solved this problem. We give content owners the confidence that they can control where their content is distributed. With that confidence, we have reached agreements that allow local broadcasters to distribute their programs on Syncbak's Internet broadcast platform via the Internet. The Syncbak platform is available to any television station that installs our server. Once the hardware is in place, stations can stream any content they own or negotiate the rights to distribute to viewers in their market. This simple and elegant solution is been supported by the two most powerful associations in TV and consumer electronics, the National Association of Broadcasters and the Consumer Electronics Associations, which are both strategic investors in the company. The NAB and CEA recognize that Syncbak seeks to collaborate with broadcasters rather than trying to make an end-run around content owners.

In the three years Syncbak has been building a legitimate Internet broadcast platform, several other companies have formed to sell broadcast content on the Internet. Most have taken a very different approach. Instead of developing technology that legally ports broadcast TV to a broadband platform, they have relied on creative legal theories. Although the theories have varied a bit, all have argued, in effect, that they are legally permitted to pick up broadcast signals, process, re-code and degrade them, and retransmit them on the Internet—all without getting consent from the stations, respecting market boundaries and the rights of content owners.

So far the courts have disagreed. Carriage of broadcast television over the Internet, without the consent of local stations and without respecting local broadcast markets, is not a solution. A contrived apparatus for Internet rebroadcasting that relies on copyright infringement, illegal carriage without consent or theft of service cannot be brushed aside with strained legal theories or cloaked by superficial technical innovation. Legal and technical contrivances do not provide a firm foundation on which to build the future of television distribution. Fortunately, real technical innovation exists. Syncbak's solution extends the reach of local broadcasting to the

Internet with the support of broadcasters and content owners, without infringing on intellectual property rights and without undermining localism.

Thank you, Mr. Chairman, for your consideration of these important issues. As you continue to examine both the business and legal implications of the migration of viewing from traditional television to the Internet, I hope you will keep in mind how important it is that localism is maintained via collaboration with local broadcast stations. I look forward to serving as a resource for you and the Committee as you delve further into these issues.

Sincerely,

JACK PERRY,
Founder and CEO,
 Syncbak.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. KAY BAILEY HUTCHISON TO
 BARRY DILLER

Question 1. If Aereo prevails in court and is able to offer its service with ongoing certainty in New York City (and possibly expand into other markets), what effects—both immediate and longterm—do you think it may have on:

- a. transmission consent negotiations between MVPDs and television broadcasters?
- b. the type of content broadcast over the air?

Answer. If Aereo prevails in Court and is permitted to continue offering a remote antenna and DVR system to consumers, I am convinced it will have a thoroughly positive effect on broadcast content, broadcast revenue, and, most importantly, consumer choice and satisfaction.

From the Radio Act of 1927 through to the present, Congress has declared that television airwaves belong to the public, and that broadcasters must operate in the public interest, convenience, and necessity. Indeed, broadcasters have been provided with very valuable spectrum conditioned on the specific attendant obligation to provide consumers with convenient access to terrestrial broadcast channels using antennas. Throughout the 1950s and 1960s and much of the 1970s and 1980s, consumers primarily relied on rooftop and rabbit-ear antennas as their gateway to broadcast television.

In recent decades, cable and satellite services have increased their penetration and popularity, such that today only approximately 17 percent of American consumers use antennas to watch television. Consumers still, of course, have the right to use an antenna to watch broadcast television, and the advent of digital television is reinvigorating that right. The FCC informs consumers that antennas are just as valuable for reception of digital broadcasting as for past analog television services. <http://www.fcc.gov/guides/antennas-and-digital-television>. The National Association of Broadcasters website agrees that, following the DTV transition, “[m]illions of households are now enjoying dramatically better pictures and sound and free high-definition broadcasts are available in every market in the country with just an antenna and an HDTV set, proving that free TV is better than ever.”¹ And the Wall Street Journal recently observed that “[i]t’s cool to have rabbit ears again.” Christopher S. Stewart, “Over-the-Air TV Catches Second Wind, Aided by Web,” Wall Street Journal, February 21, 2012. But still, given the ubiquity of cable and satellite, many consumers are not taking full advantage of their right to access broadcast television via an antenna, and the reality in many metropolitan areas remains that tall buildings and other obstructions can interfere with broadcast reception using conventional antennas. To address such barriers to consumer choice, Aereo’s technology is designed to empower consumers to access broadcast television effectively and efficiently.

Particularly as MVPD monthly fees continue to significantly outpace the cost of inflation, consumers deserve actual, functioning alternatives to cable or satellite services, including enhanced ability to watch broadcast television using antennas. The effect, if any, that such alternatives might have on negotiations between MVPDs and television broadcasters is difficult to predict at this very early stage. In this regard, the existing retransmission consent regime applies only to services that retransmit broadcast content, such as cable and satellite MVPDs. No retrans-

¹National Association of Broadcasters, “Innovation in Television,” available at <http://www.nab.org/television/innovation.asp>.

mission consent is required where consumers access television broadcasts over the air, regardless of whether they use antennas from Aereo or Radio Shack.

At its core, Aereo is about giving consumers greater choice about and control over their television viewing experience. Aereo provides no greater access to broadcast television than consumers already are entitled to using home equipment, but it provides it in a convenient, innovative, easy-to-use way that maximizes their right of access. They can get the broadcast content they want and watch it at their convenience and on the device of their choosing. There is no law requiring consumers to watch television only on television sets, and for good reason. Today's consumer watches video everywhere there is a screen—on home computers, tablets, laptops, and mobile phones. In giving broadcast television that same flexibility, Aereo has the potential to increase significantly the broadcast television audience. When consumers watch television more, the broadcast industry wins. The industry can garner greater advertising revenue, which ultimately will translate into the creation of more and better programming. And the integration of social networking features into the Aereo platform will benefit the broadcast industry, at no cost to the broadcasters, by giving fans of even the most obscure television programs an easy way to spread the word about their favorite shows.

Question 2. Do you believe there is a solution that would provide the positive benefits of cable encryption to cable operators while also allowing for IP-based devices and other innovative products that more consumers are purchasing to have the opportunity for success in the marketplace? Are there any risks to consumers of allowing innovative devices the ability to decrypt the basic cable signals so they can access those channels unencumbered by additional equipment or reduced functionality?

Answer. I would urge Congress to ensure that if basic tier encryption is to be permitted, any impact does not affect innovative services and products that benefit consumers and does not limit in any respect the existing rights of consumers to access over the air broadcast television.

Question 3. Do you believe more should be done to reform spectrum policy in order to freeing up spectrum to meet the growing demand for wireless broadband and mobile and nomadic viewing of online video? If so, what specific recommendations do you have to making more spectrum available?

Answer. Expanding the availability of spectrum dedicated to wireless broadband is an urgent priority and Congress should establish a date-certain for the Federal Communications Commission to act. New spectrum licenses should likewise contain rigorous build-out requirements that ensure prompt deployment. And finally, new spectrum should be allocated in a manner that, as best as practicable, brings new competitors into the marketplace.

Question 4. How important is unlicensed spectrum to users that watch online video via their smartphone or tablet?

Answer. There is a clear role for unlicensed spectrum. The ability to use unlicensed spectrum for online video delivery, particularly by making available white spaces between existing licensed video broadcast spectrum, will support opportunities that we cannot now anticipate, but that we will regrettably lose if sufficient unlicensed spectrum is not made available. However, unlicensed spectrum alone may not be a panacea for the needs of many online services, including Internet video, and Congress and the FCC should consider also how to make available more licensed spectrum as well.

Question 5. Do you have concerns about the growing problem of piracy, primarily with online video? In the wake of PIPA & SOPA protests, how can the government properly balance its efforts to protect intellectual property but do so in a way that doesn't hinder innovation or free speech?

Answer. Intellectual property enforcement, innovation and free speech can and should co-exist. The Copyright Act generally works well. The private sector increasingly has taken steps to work collaboratively to make lawful content more accessible while assisting rightsholders with efforts to combat unlawfully distributed content.

SOPA and PIPA were overly broad attempts to tackle the problem of foreign websites that engage in unlawful activity. This is a complicated issue. I am not convinced that a legislative response is needed, but if so, Congress should proceed carefully to develop a narrowly-tailored remedy that avoids chilling innovation or free speech.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. KAY BAILEY HUTCHISON TO
SUSAN D. WHITING

Question 1. Do you believe there is a solution that would provide the positive benefits of cable encryption to cable operators while also allowing for IP-based devices and other innovative products that more consumers are purchasing to have the opportunity for success in the marketplace? Are there any risks to consumers of allowing innovative devices the ability to decrypt the basic cable signals so they can access those channels unencumbered by additional equipment or reduced functionality?

Answer. As you know from my testimony at the hearing, Nielsen's primary business is measuring what consumers watch on various media platforms what consumer package goods they purchase. The question is beyond the scope of our primary business activities, so I feel it would be inappropriate for me to provide a specific response.

Question 2. Do you believe more should be done to reform spectrum policy in order to freeing up spectrum to meet the growing demand for wireless broadband and mobile and nomadic viewing of online video. If so, what specific recommendations do you have to making more spectrum available?

Answer. Nielsen is committed to providing its wide variety of clients the best possible measurement of media use regardless of the platform where it originates. We believe it is best for those who have a direct interest in spectrum allocation, including our clients, to offer suggestions on spectrum policy.

Question 3. How important is unlicensed spectrum to users that watch online video via their smartphone or tablet?

Answer. In our role as a measurement service for online video, we do not have a position on the importance of unlicensed spectrum.

Question 4. Do you have concerns about the growing problem of piracy, primarily with online video? In the wake of PIPA & SOPA protests, how can the government properly balance its efforts to protect intellectual property but do so in a way that doesn't hinder innovation or free speech?

Answer. Nielsen is a privacy observant and compliant company that believes in the value of consumer opt in as essential to good research. Where external databases may be utilized, aggregated and made anonymous, data is the preferred pathway whereby modeling can be employed to determine likely audiences.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. OLYMPIA J. SNOWE TO
PAUL MISENER

Video Innovation and User Experience

As consumer prices for fuel, food and health care continue to increase, Americans are struggling to stretch every dollar. Unlike our government, many consumers have chosen to cut back on spending, including opting for basic-tier cable packages that are more affordable. Some consumers are even "cord-shaving"—choosing to access free over-the-air television in combination with cheaper alternatives for their entertainment, including innovative products such as Apple TV, Xbox 360, Roku and Boxee that allow them to stream online content, including Netflix, Hulu, TED talks and YouTube. These products allow consumers to stream online content, including videos from their friends and family and also fit their family budget by utilizing free other the air broadcasts or basic cable service.

The Commission is considering an order that would allow for the encryption of basic cable signals. While there are benefits to encrypting basic cable service, some parties have expressed concerns that innovative devices allowing users to combine online content with basic cable service may no longer be compatible without additional hardware or software or reduced functionality of the device. Additionally, consumers will be required to add yet another electronic device, a cable box, to their home and may face additional monthly fees for it.

As you probably know, Congress specifically addresses this issue in Section 624A of the statute, which requires the FCC to assure compatibility between consumer electronics equipment and cable systems so cable customers can enjoy the full benefits of both.

Question 1. Do you believe there is a solution that would provide the positive benefits of cable encryption to cable operators while also allowing for IP-based devices and other innovative products that more consumers are purchasing to have the opportunity for success in the marketplace? Are there any risks to consumers of allowing innovative devices the ability to decrypt the basic cable signals so they can ac-

cess those channels unencumbered by additional equipment or reduced functionality?

Answer. Amazon currently has no position on cable encryption. Amazon Instant Videos are available via broadband Internet access for instant streaming on the Kindle Fire, as well as Xbox 360, PlayStation 3, PC, Mac, Roku, and hundreds of TVs and Blu-ray players.

Wireless Broadband

The wireless industry has seen explosive growth and amazing innovation over the past decade. Currently, there are more than 330 million wireless subscribers in the U.S. and more consumers are viewing online video via their mobile devices. According to Cisco, approximately seventy percent of all global mobile data traffic will be video by 2016.

While Congress has taken an incremental step to make more spectrum available, I believe more can and must be done to meet the future needs of all spectrum users and properly address existing spectrum challenges. For example, for over three years now, I have been calling for a comprehensive inventory of both Federal and non-federal spectrum usage yet such essential exercise has not been done. We also still lack a national strategic spectrum plan, which would provide a long-term vision for domestic spectrum use and strategies to meet those needs.

We should also take additional steps to modernize our Nation's radio spectrum planning, management, and coordination activities through better collaboration between the FCC and NTIA, fostering greater technical innovation, as well as promoting more investment in infrastructure. Such multi-faceted approach will ensure the long-term health of the spectrum ecosystem, that innovation can continue to flourish, and consumers will be able to continue to reap the amazing benefit of all types of wireless communications.

Question 2. Do you believe more should be done to reform spectrum policy in order to freeing up spectrum to meet the growing demand for wireless broadband and mobile and nomadic viewing of online video? If so, what specific recommendations do you have to making more spectrum available?

Answer. Increasing the availability and performance of broadband Internet access is an important policy goal for the benefit of consumers. Of course, wireless broadband access is crucially important, but we do not have specific recommendations for how to make additional spectrum available.

Question 3. How important is unlicensed spectrum to users that watch online video via their smartphone or tablet?

Answer. Unlicensed spectrum is an important component of broadband Internet Access. For example, Wi-Fi allows consumers more flexibility in how and where they can obtain broadband access to the Internet.

Online Piracy

While the increase in broadband speeds has brought significant benefit to users, it has also made it easier to distribute illegal content. A movie that once took hours to download can now be uploaded and transmitted across the Internet in mere seconds. In addition, consumers are increasingly lured to well-designed websites that are devoted almost exclusively to unauthorized downloading and streaming of copyrighted content such as music and movies. It is my understanding that more than 167 million copies of the top 10 most pirated movies on the Internet have been illegally downloaded over the past five years.

This illegal activity attributes to a significant economic loss to the intellectual property community through lost revenue and has an adverse impact on jobs in that industry. It can also create congestion on broadband networks and many of these illegitimate websites can compromise millions of personal computers through the distribution of malware that might be embedded in the illegal content—according to McAfee, 12 percent of all known sites that distribute unauthorized content are actively distributing malware to users who download content.

Question 4. Do you have concerns about the growing problem of piracy, primarily with online video? In the wake of PIPA & SOPA protests, how can the government properly balance its efforts to protect intellectual property but do so in a way that doesn't hinder innovation or free speech?

Answer. We strongly oppose online video piracy. Although we did not support SOPA as it was drafted, we agree that piracy is a public policy challenge, and that public policy should strike the balance between the need to combat piracy without hindering innovation or free speech.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. JIM DEMINT TO
PAUL MISENER

Question 1. How many American households have access to Amazon's video services?

Answer. Anyone with a broadband Internet connection can rent or buy Amazon Instant Videos or access thousands of Prime Instant Video selections at no additional cost with a paid annual Amazon Prime membership. Amazon Instant Video is a digital video streaming and download service that offers Amazon customers the ability to rent, purchase or subscribe to a huge catalog of videos. Customers can choose from more than 120,000 titles to purchase or rent and content ranges from new release movies to classic favorites, major television shows, entire seasons, or even day after air TV. Prime Instant Video is Amazon's video subscription offer—it includes more than 18,000 movies and TV episodes selected from the full assortment available at Amazon Instant Video. This subscription offer allows U.S. Prime customers to stream as many Prime Instant Videos as they like, at no additional cost.

Question 2. How many Internet service providers does Amazon use to reach its American consumers?

Answer. Amazon customers choose their own provider of Internet access service.

Question 3. To the best of your knowledge, how many households with access to Amazon's video services have more than one option for a high speed Internet service capable of delivering them Amazon's video services?

Answer. We do not have any independent data, but are aware that the Federal Communications Commission collects and reports this information.

Question 4. Would you describe for the Committee the amount of capital and types of facilities Amazon has built to provide its video services to consumers?

Answer. We do not report our investments or specific technologies, but we are constantly working on ways to increase selection and convenience for our Amazon Instant Video customers. Amazon Instant Video is a digital video streaming and download service that offers Amazon customers the ability to rent, purchase or subscribe to a huge catalog of videos. Customers can choose from more than 120,000 titles to purchase or rent and content ranges from new release movies to classic favorites, major television shows, entire seasons, or even day after air TV. Prime Instant Video is Amazon's video subscription offer—it includes more than 18,000 movies and TV episodes selected from the full assortment available at Amazon Instant Video. This subscription offer allows U.S. Prime customers to stream as many Prime Instant Videos as they like, at no additional cost.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. OLYMPIA J. SNOWE TO
BLAIR WESTLAKE

Video Innovation and User Experience

As consumer prices for fuel, food and health care continue to increase, Americans are struggling to stretch every dollar. Unlike our government, many consumers have chosen to cut back on spending, including opting for basic-tier cable packages that are more affordable. Some consumers are even "cord-shaving"—choosing to access free over-the-air television in combination with cheaper alternatives for their entertainment, including innovative products such as Apple TV, Xbox 360, Roku and Boxee that allow them to stream online content, including Netflix, Hulu, TED talks and YouTube. These products allow consumers to stream online content, including videos from their friends and family and also fit their family budget by utilizing free other the air broadcasts or basic cable service.

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and other innovative products that more consumers are purchasing to have the opportunity for success in the marketplace? Are there any risks to consumers of allowing innovative devices the ability to decrypt the basic cable signals so they can access those channels unencumbered by additional equipment or reduced functionality?

Answer. Microsoft has not participated in the FCC's proceedings regarding cable basic service tier encryption. (*In the Matter of Basic Service Tier Encryption*, MB Docket No. 11-169 and *Compatibility Between Cable Systems and Consumer Electronics Equipment*, PP Docket No. 00-67, FCC 11-53, rel. Oct. 14, 2011.) The docket raises complicated issues regarding whether the Commission's basic service tier encryption prohibition remains necessary to promote compatibility between digital cable service and consumer electronics equipment in all circumstances. It appears as if there have been over 150 filings by cable operators, consumer groups, and the consumer electronics industry with a more direct stake in the outcome of the proceeding. Microsoft is monitoring the record as it develops and will participate as necessary to ensure that the interest of our consumers and business are considered by the Commission.

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Question 2. Do you believe more should be done to reform spectrum policy in order to freeing up spectrum to meet the growing demand for wireless broadband and mobile and nomadic viewing of online video? If so, what specific recommendations do you have to making more spectrum available?

Answer. Given the growing demand for video and data applications over wireless connections more must be done to ensure that consumers are able to have meaningful wireless broadband connectivity. That means making sure more radio spectrum is made available for wireless broadband connectivity. It will be important for policymakers to ensure that (1) there are sufficient amounts of spectrum available in the TV bands for unlicensed use; and (2) underutilized spectrum, especially spectrum below 3 GHz, is made available for additional dynamic spectrum access. Making unlicensed spectrum available in the TV bands ensures that the first sharing technologies involving databases are able to emerge and are available to facilitate sharing in other bands. In addition, unlicensed TV band spectrum is expected to provide opportunities similar to that of Wi-Fi except those opportunities will be greatly enhanced given the propagation characteristics of the band. As NTIA and the FCC are doing in the 1755-1850 MHz band, it is important that both entities work together to identify additional sharing opportunities below 3 GHz leveraging dynamic access sharing techniques and cognitive radios as well as database and sensing technologies. Also, the Commission should continue promoting secondary markets use by licensees and other spectrum users.

In order to better understand the potential sharing opportunities, Microsoft has established spectrum observatories in DC as well as in Redmond and Seattle. Through our observatory, we are recording the amount of spectrum used in a given spectrum band at those locations. More information on our observatory can be found at <http://spectrum-observatory.cloudapp.net/> and anyone will be able to access and leverage our results.

Question 3. How important is unlicensed spectrum to users that watch online video via their smartphone or tablet?

Answer. It is very important. We know that video traffic is increasing on mobile networks and that tablets increasingly leverage Wi-Fi networks as a means of broadband connectivity. This year, video traffic represented a half of all data traffic on mobile networks and NetworkWorld indicated that it represents as much as 69 percent of the traffic on some mobile networks. Last year, Commscore found that in October 2011, more than 40 percent of U.S. digital traffic coming from mobile phones occurred over Wi-Fi connections and projections suggest that 90 percent of tablets in use are Wi-Fi only. These statistics demonstrate that Wi-Fi is particularly important to consumers seeking broadband connectivity when using a smartphone or tablet and consumers are increasingly accessing video content wirelessly. Having more unlicensed TV Band spectrum will help to meet this unfolding demand.

Online Piracy

While the increase in broadband speeds has brought significant benefit to users, it has also made it easier to distribute illegal content. A movie that once took hours to download can now be uploaded and transmitted across the Internet in mere seconds. In addition, consumers are increasingly lured to well-designed websites that are devoted almost exclusively to unauthorized downloading and streaming of copyrighted content such as music and movies. It is my understanding that more than 167 million copies of the top 10 most pirated movies on the Internet have been illegally downloaded over the past five years.

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Question 4. Do you have concerns about the growing problem of piracy, primarily with online video? In the wake of PIPA & SOPA protests, how can the government properly balance its efforts to protect intellectual property but do so in a way that doesn't hinder innovation or free speech?

Answer. Piracy is a serious issue which threatens jobs and innovation and needs to be addressed, but as we made clear in our opposition to the SOPA legislation as drafted, any solution must absolutely preserve an open Internet. This is a highly complex problem and any legislative solution must avoid unintended consequences. Any legislation must include a sufficiently high standard for determining whether a site is rogue, so as to truly target the worst of the worst. Moreover, to further ensure proper application of new remedies, rights holders should be required to produce sufficient evidence of a site's wrongdoing so that decisions of the courts are well-founded and not based on mere notice pleading. Efforts to develop a robust solution to this real problem should continue so that legislation targeting the truly rogue sites without harm to the Internet can be achieved.