DIGITAL FUTURES:

a need-to-know policy guide for independent filmmakers

a joint project of
independent television service &
center for social media at
american university

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Independent Television Service (ITVS.org)

The Independent Television Service (ITVS) funds and presents award-winning documentaries and dramas on public television, innovative new media projects on the Web, and the weekly series *Independent Lens* on Tuesday nights at 10 P.M. on PBS. Funded by the Corporation for Public Broadcasting, ITVS opened its doors in 1991. ITVS was created by a historic mandate of Congress to champion independently produced programs that take creative risks, spark public dialogue, and serve underserved audiences.

Center for Social Media (centerforsocialmedia.org)

The Center for Social Media (CSM) showcases and analyzes media as creative tools for public knowledge and action. CSM organizes film series, panels, and public events; conducts research; and publishes reports and articles. The Center is part of the School of Communication at American University.

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FOREWORD

In a world of flickering screens, large and small, one group has consistently championed more inclusive views of the world around us: independent filmmakers. Working outside of the studios and television networks, indies bring diverse voices to televisions, cinemas, and computers alike, telling stories ruled not by profit but by art, by conviction, and by people's need to connect to one another and the world around them.

Today's digital technology has forever transformed the way we make and consume media in America. The publication you hold in your hands exists to help you, as an independent media maker, navigate these ongoing changes and learn how to protect your interests—as both a citizen and a filmmaker. And it comes at a moment when critical decisions are being made, in the halls of government and in the marketplace, about how digital technology will be used to create, copy, distribute, and present media in the years to come.

This guide would not exist without the support of Becky Lentz at the Ford Foundation. Nor would it exist without the work and verve of ITVS's Patrick Wickham, fearless seer, eloquent advocate, and longtime champion of indies who led this charge down the digital road. Professor Pat Aufderheide at American University's Center for Social Media provided editorial vision and assembled the right team of experts who provided the content for the essays that follow. Our thanks to Marjori Bradford, Cindy Cohn, Chris Murray, Andrew Jay Schwartzman, James Snider and Gigi Sohn. We also gratefully used the work of James Grimmelman, Shari Kizirian, Jessica Mickelsen, and Jonathan Rintels. Karen Hirsch pulled everything together as project manager and contributing writer, with Eric Martin adding his wordsmithing support. We are also grateful to Woodward A. Wickham, who helped get us started developing the concept for this project.

We believe that as digital opportunities and challenges change our landscape, one question stands out: how will the public—and the diversity that independent filmmakers bring to it—benefit? Independent filmmakers depend on a healthy public media ecosystem, and our shared future is tied to policy that nurtures or weakens that system. We hope that this guide will further our understanding of these policies and help all of us do what we do best: take creative risks, speak our minds, and champion the many voices that matter most but are seldom heard.

SALLY JO FIFER, PRESIDENT
INDEPENDENT TELEVISION SERVICE

WHAT IS DIGITAL— AND WHY DOES IT MATTER?

For today's media makers, the essence of digital is this: everything we do to create content can be turned into a series of ones and zeros that our naked eyes can't decode into pictures and sounds, but that a variety of devices can.

This new digital code has changed media making forever. Why? Because this code has transformed the four most important processes for media makers—production, replication, distribution, and presentation.

THE PROCESSES OF DIGITIZATION

To produce media, today's artist can point a digital video camera at a tall mustachioed man scratching his ear and capture this moving image, represented inside the camera as a unique piece of digital code. The artist can manipulate that code to remove the man's mustache and add a large and hungry dinosaur bearing down behind him (using CGI technology). The artist can then combine this new code with other pieces of code to shape a complex story of images, sound and music (using editing systems such as Avid or Final Cut Pro).

The result is an enormous sequence of finished code: a movie, say, that can be copied an unlimited number of times, with each copy an exact replica of the original. Any of these copies can then be transmitted through the air, across wires or via a physical container (such as a CD), depending on how large the code is and how much capacity the transmitter has. Finally, this code can be read at the receiving end in many different ways by a wide variety of devices—a computer, a projector, a television, a phone—that translate the code into images and sound.

CONSEQUENCES FOR POLICY AND THE MARKETPLACE

The possibilities with digital technology are nearly infinite. The realities are much more confined. The question with digital is not what might happen, but what we will actually do with it.

The dizzying pace of digital change has, in fact, caught us all somewhat by surprise. Businesses and lawmakers are scrambling to catch up with the changes wrought by this technological explosion. New business models and new policies are being built today and tomorrow to deal with it.

Major economic stakeholders in today's burgeoning media economy are all working hard to shape the outcome in their own interests. And much is at stake for them all, because digital technology challenges the traditional business models that both indies and media companies have relied on to profit financially from their work.

But they are not the only stakeholders. There is also the public—all of us as citizens and taxpayers, parents and children, artists and consumers. When the dust settles on the new digital economy and society, how will the public have benefited? Will the media policies we make actually promote freedom of speech and diversity of expression? Will they foster the many facets of the cultures that make up our nation?

The policies that will shape how we use this digital code are still up for grabs. This publication defines the most important of these questions and decisions for filmmakers, tells you the current status of debate, and gives you resources to learn more.

DIGITAL CHALLENGES AND OPPORTUNITIES FOR INDIES

The good news for independents is that digital technology has made production cheaper, faster, and more manageable. It has also opened up avenues for distribution, such as the Internet and, to a lesser extent, cable and satellite, while drastically reducing the costs of replicating copies of an independent's work.

And that's also the bad news. Independents now face challenges in three big areas: ownership, distribution, and funding. Specifically:

Ownership: How will indies protect their work from unauthorized use and copying, while still having access to others' work for legitimate use in their own creations?

Distribution: Will new distribution networks give indies more or less access to audiences—and how will that distribution affect production?

Public support: How will the public resources now provided—such as spectrum allotments and public funding—change in the digital era?

WHAT WILL INDIES DO?

In the tradition of democracy, stakeholders are asserting their interests in the coming changes. Broadcasters, movie studios, unions, technology companies, and other players are trying to figure out how to make sure that the answer to these questions benefit them. They are taking their issues to legislators, to the courts, and to consumers. The result will be policy.

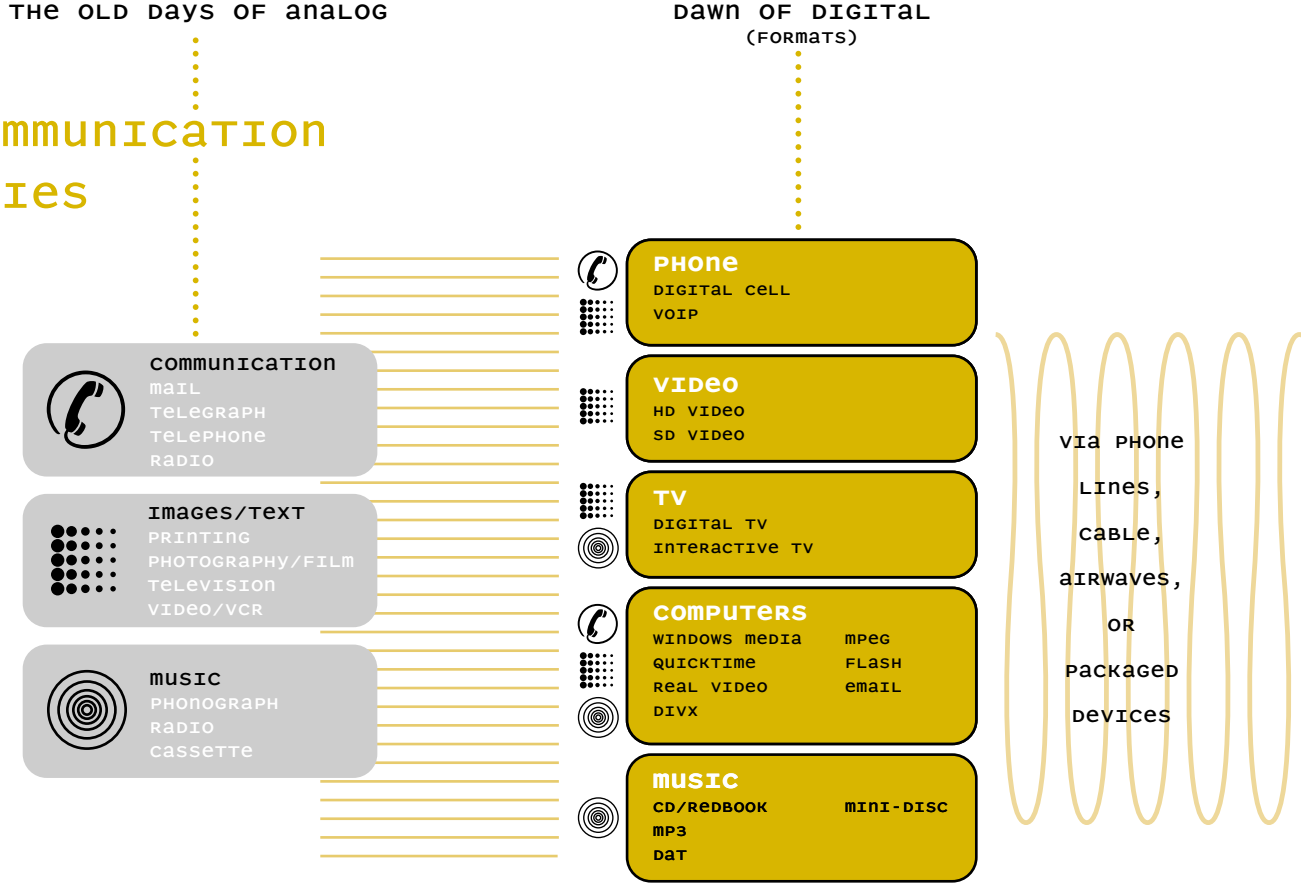
Independent filmmakers are also stakeholders—as well as artists and business people with a job to do. This need-to-know guide helps you connect to the issues that affect your art and work, and it connects you to organizations that are working on those issues now.

Digitization doesn't change everything. The old standbys of good storytelling, the battles over concentrated ownership, the resistance to change by those with power, and conflicts over public support repeat themselves in the digital age.

But digital has changed the ecosystem that indies live in—an ecosystem where independent voices continue to thrive outside the mainstream of commercial media. Independent filmmakers are success stories of the present environment, and they have both nurtured and been nurtured by the public media ecosystem. The vision that indies bring is important, as stakeholders thrash out the terms under which we will all use digital code today and tomorrow.

Map of Communication Technologies

The Future of media is digital. Digital brings ubiquity (being able to access information from anywhere) and interactivity (marrying communication with media). This means that all of our media devices could have the power to link seamlessly to one another—if they are designed and allowed to do so.



Glossary of Media Technologies

3G Phones Third-Generation Wireless. Analog cell phones of the 1970s and 1980s are first-generation wireless. Digital cell phones of the 1990s to present are second-generation. 3G phones are expected to have advanced multimedia capabilities, send and receive data at speeds up to 2 million bits per second or megabits per second (Mbps), and have roaming capabilities throughout much of the world.

Analog For media, a means of conveying information by varying the frequency or amplitude of an electromagnetic pulse or wave.

Blu-Ray This rewritable optical disc standard is the same size as CD and DVD discs, but holds 5 to 10 times as much data, allowing for very high-quality video recording. The Blu-ray capacity: 27 to 50 gigabytes of data; record/playback at 36 megabytes per second (MBps).

Bluetooth A specification that allows digital devices, such as computers, PDAs, and mobile phones, communicate and exchange data with each other through a wireless network over very short distances of about 30 feet.

CD Compact Disc. CDs store and playback digital data, most commonly audio, using a standard known as the Red Book. Introduced in the early 1980's by Sony and Philips, the CD was the first widely successful consumer digital media product, displacing its analog equivalent: the vinyl album.

CD-ROM Compact Disc Read-Only Memory. Established in 1988 by Sony and Philips, CD-ROM extends the CD format to support nonaudio data for use with computers and other devices, such as game consoles.

Today's Digital Devices

Portables
WAP phone
3G phone
PDA
MPEG-4 players

Broadcast media
Radio
Television
Smart radio
Smart TV

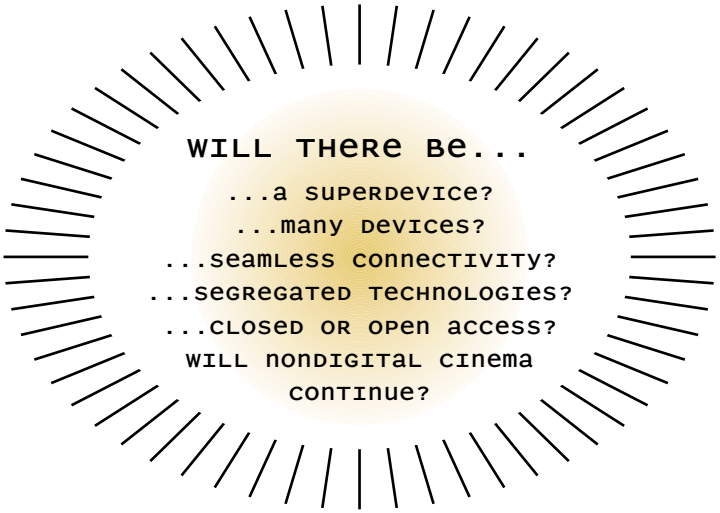
Master devices
Personal computer
Digital video recorder (DVR)

Players
VCR
CD player
DVD player
Blu-ray player
Game console

Digital cinema projection

wired and wireless, anywhere

The Future



Codec Compressor/Decompressor. A mathematical algorithm for reducing the amount of data needed to describe a file. Codecs make it possible to transport large amounts of data more efficiently.

DAT tape Digital Audio Tape. Originally targeted at home users, it later caught on for professional audio, video, and film sound recording. Now being replaced by recording directly to camera, hard drives, and optical discs.

Digital For media, a means of conveying information through a series of ones (positive states) and zeros (nonpositive states).

Digital broadcast See DTV.

Digital cable Transmitting video through ones and zeros lets cable providers squeeze more channels through their systems, at potentially better picture quality.

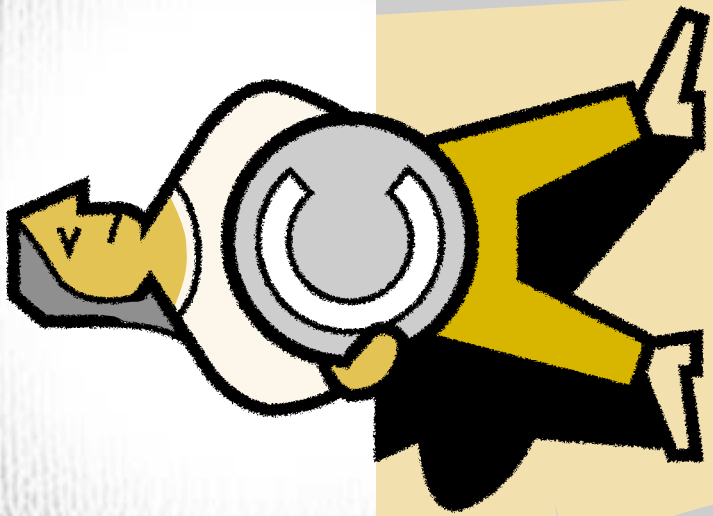
Digital cell phone By converting speech into ones and zeros, mobile phone companies can provide clearer sound more efficiently than with analog cell technology. That allows for greater system capacity on a given frequency and allows for easier transmission of other sorts of data, including images.

Digital home satellite A means of delivering television, radio, and Internet data from a satellite to individual homes. Digital Home Satellites can reach rural homes beyond the reach of high-speed DSL and cable lines, but access currently Wstarts at about $40 per month.

continued on page 47

DO RECENT COPYRIGHT CHANGES IMPACT ME?

WHAT IS "FAIR USE"?



DOES A DIGITAL WORLD CHANGE COPYRIGHT?

WHO OWNS WHAT: COPYRIGHT IN DIGITAL TIMES

BELTWAY BUZZWORDS

INTELLECTUAL PROPERTY LAW
COPYRIGHT
TRADEMARK
FAIR USE
COMPULSORY LICENSING
PIRACY

THE PLAYERS

PRO-STRONG COPYRIGHT AND TRADEMARK LAW:

- Organizations representing content owners, such as Motion Picture Association (MPAA), the Recording Industry Association of America (RIAA), and the Association of American Publishers (AAP).
- Large brands support strong trademark law and enforcement.

PRO-BALANCED COPYRIGHT LAW:

- Nonprofits that work specifically on this issue (Public Knowledge, Electronic Frontier Foundation, and Creative Commons).
- Organizations representing artists including National Alliance for Media Arts and Culture (NAMAC), Association of Independent Video and Filmmakers (AIVF), and Future of Music Coalition.
- Organizations representing librarians including American Library Association (ALA), Association of Research Libraries. Organizations representing researchers including the American Academy of Arts and Sciences and other scientific and computer researchers in favor of sharing of knowledge.
- Computer manufacturers and organizations representing consumer electronics manufacturers, including The Consumer Electronics Association (CEA) and Gateway Computers.
- Internet Service Providers such as Verizon.
- Some law and university professors.

HOW COPYRIGHT AND TRADEMARK AFFECT YOU

Copyright and trademark are ways of asserting and protecting ownership over creative products. Filmmakers need to "clear rights"—come to an agreement with copyright holders. They negotiate their own copyrights with co-producers and distributors and they exercise caution around trademarked images. Copyright and trademark put barbed-wire fences up around the content and symbols of our culture. The terms of copyright and trademark affect what filmmakers do and where their creativity can go.

Filmmakers want protection for their own work, and they also want access to work whose makers have long since passed on or work that was never intended to be copyrighted, and they want the right to comment critically on their own culture—even if it means using a common cultural symbol (such as the McDonald's arches) to make their critique.

As digital innovation has made entertainment ever more ubiquitous and ever easier to upload, download, and stream filmmakers' work, content owners have scrambled to find ways to control what they own. One resort has been to push for more restrictive laws governing copyright and trademark.

BACKGROUND ON COPYRIGHT AND TRADEMARK

Copyright law balances two kinds of rights. It protects creators, artists, and inventors by giving them control over their creations and discoveries. It also ensures that the public gains access to these works "to promote science and the useful arts," according to the Constitution. From an artist's perspective, it balances rights of owners of finished creative work with the rights of future makers of new work.

The balance is now shifting. Owners until recently only had a "limited monopoly"—originally, in 1790, this limited term was set at 14 years. After the end of the copyright term, the work becomes part of the public domain, where others may use it as they like. And even during the period protected by copyright, other people have some rights to use copyrighted material for parody, criticism, and comment, according to the "fair use" doctrine. (See sidebar below.)

But since 1960, copyright terms have been extended eleven times and now, copyright lasts 70 years beyond the life of the author and 95 years in the case of corporations. This extension has little to do with benefiting the original creator. Major media companies led by Disney—which has been protecting its Mickey Mouse copyright license fees, among other characters' lucrative

THE FAIR USE DOCTRINE

According to the "fair use" doctrine, which is part of U.S. copyright law, some copyrighted material may be used under certain circumstances. The doctrine maintains that there are socially important situations where people can copy from copyrighted work. Some examples: criticism, comment, parody, news reporting, teaching, scholarship, and research.

So how do you tell if your work qualifies as fair use? There is no ironclad rule, and that's probably a good thing—it means that there's lots of room for the doctrine to adapt to new cases. But it can also be a bad thing, when your lawyer can't tell you for sure that your use of copyrighted material is legal.

Filmmakers are understandably reluctant to take risks that could jeopardize their projects. But at the same time, it is important that filmmakers exercise their fair use rights. In the law as in other areas, the use-it-or-lose-it rule applies. Fair use is as good as the uses it is put to. Every successful exercise of the fair-use doctrine makes similar uses possible.

THERE ARE FOUR CENTRAL GUIDELINES THE COURTS LOOK AT WHEN DETERMINING IF SOMETHING QUALIFIES AS "FAIR USE":

1. If the use of copyrighted material is for nonprofit use rather than commercial purposes, courts are more likely to find fair use.

2. A particular use is more likely to be "fair" where the copied work is factual rather than creative.

3. A court is more likely to find fair use where the amount taken is small or insignificant in proportion to the overall work.

4. If the court finds the newly created work is not a substitute product for the copyrighted work (and therefore does not diminish the potential market for the original work), it will be more likely to weigh this factor in favor of fair use.

FOR MORE INFORMATION ON THE FAIR USE, GO TO FAIRUSE.STANFORD.EDU AND EFF.ORG.

licenses—pushed successfully for the extensions. Many artists, looking only at the "my copyright protected" side of the balance, supported copyright extension. But copyright extension has now locked up several generations of creative work, and artists cannot cite it, quote it, or comment on it in their own work without negotiating rights—and then, only if they can find someone who will negotiate with them.

Not only have copyrights gotten longer, but since the late 1980s there are a lot more of them. These days, you don't have to register a copyright with the Library of Congress. You own the copyright, by default, as soon as you hit "save" on your script or make your final edit. Sounds great—except that it means that now every work has a copyright somewhere. And so the default public domain has just about disappeared. At the same time, with no required registry, it can be devilishly hard to find the person who has copyright by default. And if you can't find that person, you might not get the cable contract or the essential errors and omissions insurance.

CURRENT ISSUES

Longer and stronger copyright and trademark laws shrink the amount of material in the public domain. For filmmakers, it means there is less material for you to choose with no rights attached. Copyright holders might stand in your way, or you may not even be able to find them, leaving you unable to reference the most ubiquitous songs, images, and symbols in your work.

Trademark law—different from copyright law—is intended to protect trademarks from uses that cause confusion among consumers. In 1995, Congress passed the Federal Trademark Dilution Act, which adds an extra layer of protection for famous trademarks (such as McDonald's, Wal-Mart, or Victoria's Secret.) This law is meant to protect trademarks from any uses of their mark, or brand, that lessens the mark's value in the marketplace. (There is no equivalent to fair use when it comes to trademarks.)

Filmmaker Micha X. Peled felt the impact of trademark law while he was working on his ITVS-funded film *Store Wars: When Wal-Mart Comes to Town*. Peled successfully negotiated with Wal-Mart for permission to film in stores, interview employees, and use corporate-owned footage, including clips of founder Sam Walton and shareholder's meetings. Along the way, he and ITVS avoided Wal-Mart's attempts to gain any editorial control. But fear of lawsuits led to an increase in the cost of errors and omissions insurance by about 40 percent. Furthermore, fear of legal retaliation effected changes in the film poster to obscure the image of a Wal-Mart storefront and to avoid any use of colors related to the Wal-Mart brand.

Strict trademark restrictions erode the rights of creators who want to comment on, create a parody of, or make an argument about any of the branded items in our consumer culture. When rtmark (rtmark.com), a rowdy group of socially critical artists, created a website mimicking the Dow Chemical website, all the accounts of their Internet Service Provider were temporarily shut down after Dow threatened the ISP's own provider with a lawsuit.

ONE FILMMAKER'S STORY

Filmmaker Marlon Riggs became an impromptu expert in fair use during production of his film *Color Adjustment*, which won numerous awards for its critique of the representation of African Americans during 40 years of prime-time television. The film intercuts interviews with prominent African American figures—writers, performers, critics and television producers—with clips of such programs as *The Jeffersons*, *Good Times,* and *LA Law*.

Riggs could not have made the film without segments of the programs themselves, so he needed knowledge of copyright law on his side. Riggs and co-producer Vivian Kleiman carefully researched the laws and developed their project so that their use of the footage from the networks and news stations would likely be permitted under the fair use doctrine.

When the film was near completion, they brought it for review to three lawyers, asking them to write letters stating their assessment of the filmmaker's use of copyrighted footage under fair use. The legal assessment was that the use was fair. The filmmakers were prepared with these formal, legal analyses when they began receiving challenges from the copyright owners.

Ultimately, no charges were filed against the producers. If the filmmakers had been required to pay for the use of the copyrighted material, it would likely have made the project cost prohibitive.

ON THE HORIZON

The current U.S. copyright law makes for "strong" copyright—restrictive, lengthy, and with the owners or licensors of copyright having increasing say over what users do. Some public interest law firms and legal scholars have contested the strong copyright. Artists have lagged behind. Filmmakers' interests are best served by more balanced copyright—one that benefits them both as makers of finished work and as creators of new work.

Until copyright can be relaxed and balance restored, one way to address the shrinking public domain in a "strong" copyright era is to create a legal alternative. This is what Creative Commons (creativecommons.org) has done. Created in 2002 by a group of artists, publishers, and scholars, the organization offers prefab legal contracts and software that let artists put their work in the public domain, and also put conditions on use. Thus, artists can make their work available in the public domain under some conditions and to some people, but not to others. Major artists, such as world-renowned Brazilian musician Gilberto Gil (who is also his country's culture minister), are beginning to adopt the Creative Commons model. Still, even if copyright terms were shortened and trademark terms relaxed, digital downloading makes for new problems. How will copyright holders hold on to their work in a digital era?

One response is the push to make downloading illegal. This hasn't worked very well for the recording industry, and it is not much of a strategy for filmmakers either. Besides being backward-looking, it doesn't let filmmakers take advantage of new technologies.

If you do not want to brand all downloading with the label of piracy, you are looking for new business models.

That often happens with new technologies, and it is what had to happen with the advent of radio, which played copyrighted music over the air for the first time. Eventually radio station owners agreed to pay a fee—a compulsory license—to companies that then pay owners according to rough indicators of use. That model, applied to the digital era (and as proposed by Professor William Fisher of Harvard Law School), might mean that works circulate free on the Internet but owners are paid from a fund created by taxes on the hardware and software products used to download and upload.

Another model is for an intermediary to let subscribers download anything that's been approved for distribution, like iTunes does for music. Then the intermediary can be a place to collect and distribute revenues.

Yet another approach is to offer some products on the Internet for free, and others, perhaps a higher-grade version or added-value services, for money. This is the approach of Prelinger Archives, which offers low-resolution versions of all its holdings for free, and has actually increased its profits since it has created an open website (prelinger.com). For more on Prelinger Archives, see page 18.

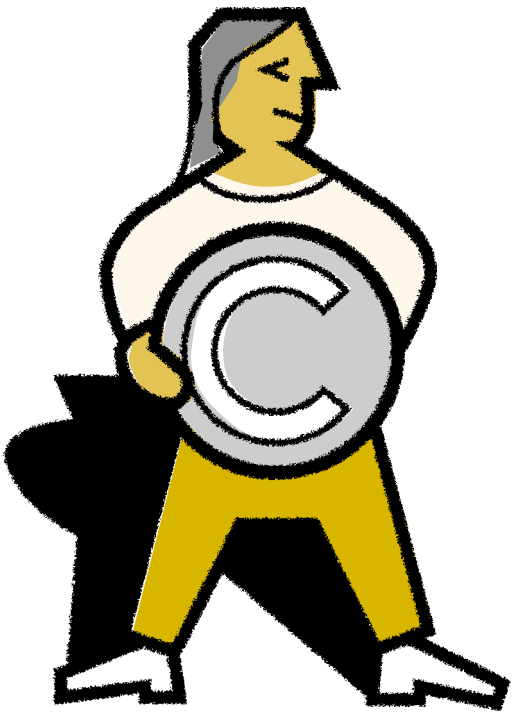
Technology and software that packages files with protection against being opened without permission—Digital Rights Management (DRM) software—are developing and could bring both solutions and new problems. DRM is discussed in detail in the next section.

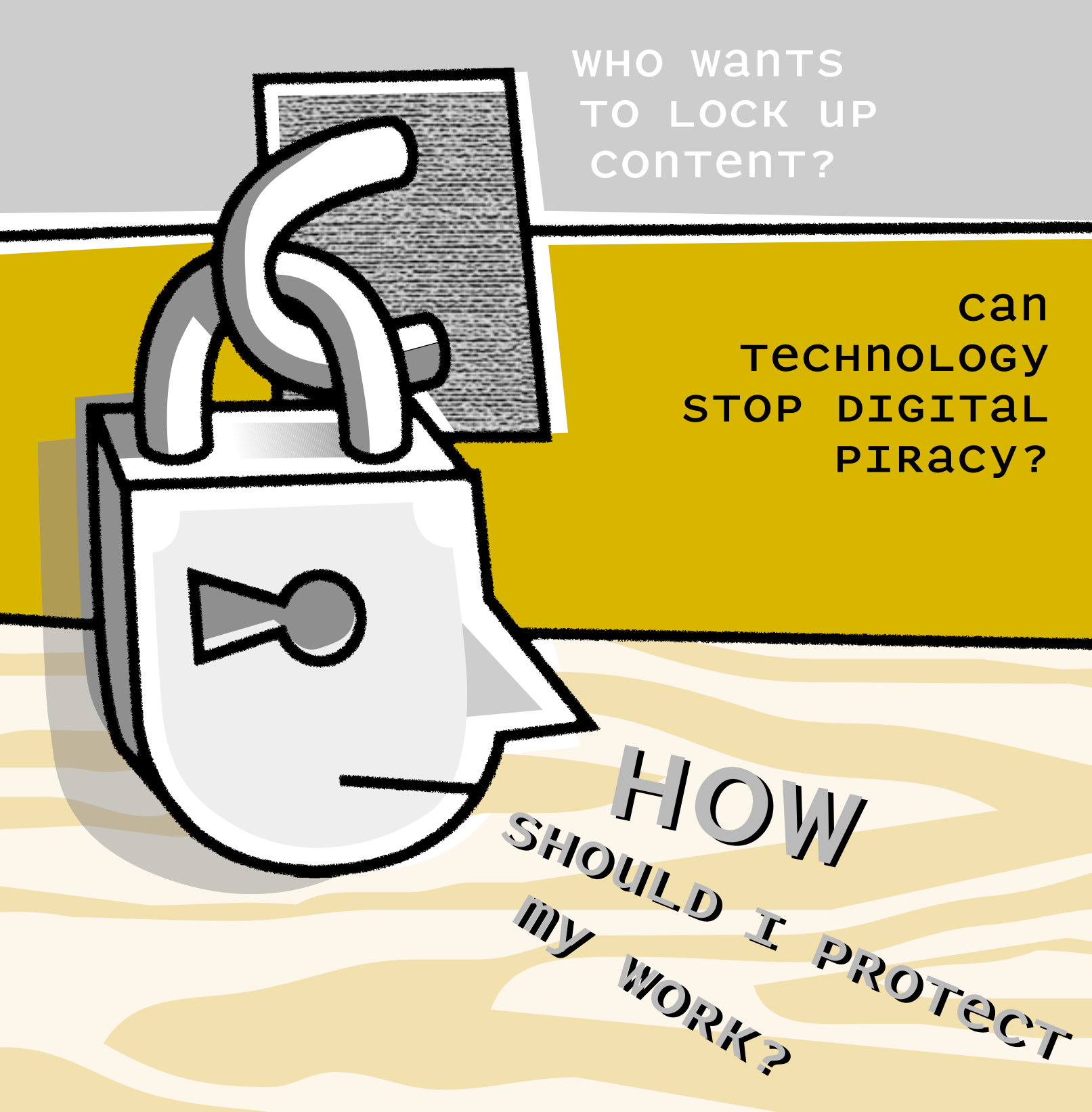
CONCLUSION

For filmmakers, the best kind of intellectual property law is the kind that maintains the balance between the rights of copyright holders and of users. That is because filmmakers are usually both. The best approach for copyright holders in a digital age is to embrace new opportunities and search for business models that can take advantage of them, rather than attempting to retreat to a pre-digital bunker.

ORGANIZATIONS THAT KNOW MORE

AMERICAN LIBRARY ASSOCIATION (ALA.ORG)
CREATIVE COMMONS (CREATIVECOMMONS.ORG)
ELECTRONIC FRONTIER FOUNDATION (EFF.ORG)
PUBLIC KNOWLEDGE (PUBLICKNOWLEDGE.ORG)




WHO WANTS TO LOCK UP CONTENT?
CAN TECHNOLOGY STOP DIGITAL PIRACY?
HOW SHOULD I PROTECT MY WORK?

DIGITAL LOCKS: PROTECTING CONTENT IN THE DIGITAL AGE

THE BELTWAY BUZZWORDS

DIGITAL RIGHTS MANAGEMENT (DRM)
PEER-TO-PEER
DIGITAL MILLENNIUM COPYRIGHT ACT (DMCA)
BROADCAST FLAG
PLUG AND PLAY

THE PLAYERS

PRO-TIGHT LOCKUP OF CONTENT:

- Organizations representing big content owners such as Motion Picture Association of America (MPAA) and Recording Industry of America (RIAA).
- Organizations representing broadcasters such as the National Association of Broadcasters (NAB) and also broadcasters themselves, concerned with protecting their own and licensees' content.

SOMETIMES SUPPORTERS OF TIGHT LOCKUP:

- Consumer electronics equipment and software designers and manufacturers' support digital rights management protection of content, but not government mandates.

SUPPORTERS OF ALTERNATIVES TO CONTENT LOCKUP:

- Consumer organizations such as Consumers Union, which back rights of consumers to use products as they wish.
- Public interest think tanks and law firms, such as Electronic Frontier Foundation, Public Knowledge, and DigitalConsumer.org, support greater public and creator access to content and innovation in business models.

HOW DIGITAL LOCKUP AFFECTS YOU

Digital files can be copied with a click, and each copy is just as good as the original. Major content owners say free downloading is eroding their businesses. So the search is on to find out how to control content in a digital age. Two current solutions: lock up equipment so it can't play unauthorized copies, and lock up individual copies—and sometimes both.

There is good news and bad news for indies about digital lockup strategies. It can keep people from illegally copying your creations, and it can convince providers to accept digital broadcasting. It could even bring down costs of sharing material safely within public broadcasting. It can also prevent you and your audiences from accessing material you want and need to see, and it could simply erase the fair use doctrine technologically.

BACKGROUND ON DIGITAL LOCKUP

Each new technology that lets users copy work without paying for it poses a challenge to the industries that depend on its revenues. Movie interests eventually got VCR manufacturers to make machines with technology that crippled recordings of properly protected tapes. CDs were originally designed as a copyproof technology, unlike audio tapes.

Here we are again—only this time it's digital. Movie interests are afraid that digital TVs, which transmit perfect digital files, will be piracy aids. Music interests are worried about eroding sales because of downloads; broadcasters, including public broadcasters, want to protect their own and licensees' content, and cable programmers don't want any free digital copies of their programs circulating on the Internet either.

Once again, media industries are looking to electronics manufacturers to design equipment so that it won't play unless you've paid. They are also exploring software that computer firms, especially Microsoft, believe could be the answer for control over your own work in the digital era: digital rights management, or DRM. DRM adds a new permission-checking layer to technologies that work with digital media.

Before you copy a movie, play back a song, or read an e-book, DRM technologies check to see whether the action is authorized. The machine examines licensing information, typically bundled along with the product. It may also demand personal information from the user. If everything checks out, you get to use the product. If not—if for instance this is the fourth attempt to play a movie you only paid for three plays of—then it won't work. DRM software is still buggy, which makes distributors even more nervous.

DRM can be used to impose many conditions on users. DRM is used in DVDs to do region coding—if you buy a DVD in Australia you cannot play it in the United States unless you change a code on your machine and you can only change the code five times during the life of the machine. It also can prevent you from fast-forwarding. Disney uses this on many DVDs to make you watch the commercials each time you watch the DVDs. DRM can give you all sorts of control.

Piracy is the biggest concern today and the major studios and the organizations that represent them have convinced Congress to criminalize digital copying. The Digital Millennium Copyright Act (DMCA) of 1998 provides both criminal and civil penalties for breaking the digital lock on a copyrighted work. The DMCA also bans the making and the distribution of any technology that circumvents DRM—which can mean a website or a T-shirt that shares DRM-breaking code.

CURRENT ISSUES

One big question with digital rights management is what it does to existing users' rights—and especially the "first sale" and "fair use" doctrines. (See page 10 for more on fair use.) First sale is the right to resell something you bought legally. It's the law, but DRM can erase that right. That hits consumers and some businesses hard.

The consequences for fair use with DRM are even graver. When you buy a book, you can quote from it to write a review and no one has the right to stop you. But if you buy a movie on DVD, it is illegal to break the DRM on it in order to include a clip from the movie in a video review, to screen it for a class, or to parody it.

If you want to make a documentary about the influence of *Gone with the Wind* on racial attitudes in the U.S., the fair use doctrine would allow you to use clips from the 1939 film. But a DRM package on copies of *Gone with the Wind* would prevent you from accessing the clips you want. DRM would squelch the production of the documentary and it would go on squelching that documentary even after the 1939 film enters the public domain. Although the fair use doctrine is supposed to be settled on a case-by-case basis, the opportunity to test new cases simply would not come up, because DRM and the laws that protect it would prevent you from even trying to include copyrighted material in your film.

DRM can also be used to force consumers to provide personal information. For instance, DRM on a recently released CD required purchasers to provide name, address, phone number, and other information before it would allow the CD to play on a computer CD drive. For certain kinds of content—perhaps a how-to video, *So You Want To Be a Whistleblower*, or a documentary about HIV+ teens—purchasers may have good reasons for wishing to be anonymous. In cases such as these, artists' desire to reach audiences conflict with distributors' interests in getting marketing information about consumers.

Another big question is how digital lockup gets implemented. Big content owners and broadcasters pushed hard for two recent Federal Communications Commission (FCC) regulations for next-generation digital television products: broadcast flag and plug and play. Both require hardware manufacturers to reduce the functionality of their devices. The "broadcast flag" rule requires manufacturers to build digital TVs—and some computers—so that they will not make copyable digital files of protected programs. "Plug and play" requires the same thing for programming received from cable and satellite broadcasts. This approach addresses piracy fears of movie studios and other content providers. It has also been criticized—among others, by some manufacturers—for stifling innovation and consumer choice, while at the same time being ineffective at addressing the problem of digital "piracy."

Some media distributors would like to see a world where desktop computers will refuse to play digital movies that aren't "signed" by an official film distributor. But this also locks out digital movies released by their own makers, unless they have the official Seal of Approval from the distributor.

Cameras, editing consoles, and projectors are also prime candidates for DRM, which could harshly limit how filmmakers can use them. Major motion picture studios are already spending millions to create an all-digital, closed distribution system between themselves and the owners of cinema multiplexes. Once that is in place, your local movie theaters may not be able to play independent films delivered in film cans or even in an open digital format, even if they want to.

ON THE HORIZON

Everyone agrees that we need new business models for a digital era. But current designs of DRM, and the laws that support them such as the DMCA, are tilted to limit users and to protect incumbent businesses, rather than enabling and encouraging new business models.

Will DRM be developed in ways that can be targeted, and that can limit the loss of existing rights such as first sale and fair use? Consumer advocates have called for the software industries to work with artists to find creative approaches.

How will the privacy of users be honored as DRM develops? Will users have a choice not to share personal information if they want to use the film or music or book they have purchased?

What will be the future of the DMCA? Piracy should be punished, but the law has already been used in many other unintended ways. The law criminalizes existing legal rights of fair use. Large companies have used it to demand information about subscribers from Internet Service Providers, and it has helped stifle competition in businesses ranging from printer cassettes to garage door openers. Will the approach of this law be amended or challenged?

Can business models be found that don't need DRM or that use it for purposes that won't cripple fair use? Several alternative business models are still experimental, as described in the previous chapter. Peer-to-peer networks are increasingly offering some interesting distribution models. (See sidebar next page.)

One approach is to give away some of your work, and charge for some. Prelinger Archives, a stock footage company specializing in industrial and training films, was founded in 1984 by Rick Prelinger. Prelinger guarded his material religiously, and no one got access to it except by contract. Then, in 1991, in a partnership with Internet Archive, a California nonprofit, Prelinger went digital and created an entirely different business model.

More than 1,600 titles in this archive are now available free for download, and they may be used without license fees. They can be downloaded in various formats. (At present, MPEG-2 is the best—close to the fidelity of DVD.) If, however, someone wants a value-added service from Prelinger's company—such as a written license granting permission to use a certain film (which a filmmaker would need for broadcast) or to sign a deal with a distributor or if they want a physical copy (which is still higher resolution that what is available on-line)—they have to pay.

Prelinger's sales are up, and he has received great publicity for his venture. In two and half years, about 1.5 million of the films have been downloaded.

His business model has potential for independent filmmakers, particularly those interested in distributing work that they have created entirely on their own, without any encumbering rights-licensing agreements. (You cannot give another artist's work away for free.)

CONCLUSION

Digital lockup technology, if developed creatively, could be an important element in new business models for a digital era. In its most rigid form, it could increase the power of media distributors at the expense of artists and consumers, impinge upon privacy, limit alternative distribution avenues, impose restrictions on film content, and limit what types of theaters can screen your work and what devices can play them.

ORGANIZATIONS THAT KNOW MORE

ALLIANCE FOR DIGITAL PROGRESS
(ALLIANCEFORDIGITALPROGRESS.ORG)
CONSUMERS UNION (CONSUMERSUNION.ORG)
ELECTRONIC FRONTIER FOUNDATION (EFF.ORG)
PUBLIC KNOWLEDGE (PUBLICKNOWLEDGE.ORG)

PEER-TO-PEER TECHNOLOGIES

"Peer-to-Peer" technologies allow users to communicate directly with each other without having to go through a central authority. Perhaps the most famous of these was Napster, which allowed people to share copyrighted music. (Napster was shut down by a lawsuit filed by the recording industry. Napster 2.0 was re-launched in 2003 with a new business model.)

The original Napster software relied upon a central searching service, controlled and hosted by the Napster company. Later systems have become completely de-centralized, removing the company entirely from the searching and file transfer process. Because companies were not involved in the actual file sharing, the Morpheus and Grokster services were recently declared legal by a federal court in California in response to a lawsuit by the recording and movie industries.

Although peer-to-peer is largely associated with sharing copyrighted material (which is illegal), many peer-to-peer services are finding legal uses for the technology. For example:

- The Internet Archive has been using peer-to-peer technologies to build an extensive library of authorized free live recordings of concerts.
- Government works, such as presidential speeches, and noncommercial works, such as home video footage and personal accounts of the terrorist attacks of September 11, 2001, are increasingly available through peer-to-peer system.
- Altnet is a peer-to-peer network that gives consumers easy access to secure content that originates from content owners and not big media companies. Content owners establish a direct-licensing relationship with end-users and control all usage rules and pricing associated with their files. Creators can charge users for their content, provided they have an e-commerce infrastructure in place. To protect content, Altnet uses widely available digital rights management technologies from Microsoft and Trymedia.

Using another business model, other peer-to-peer systems have been experimenting with charging a fee to join the network and then using the fees to pay artists who contribute content made available to the users.


HOW CAN INDIES SURVIVE?
DOES MEDIA CONCENTRATION HURT ME?
WHY DO BIG COMPANIES KEEP GETTING BIGGER?

WHAT MEDIA CONCENTRATION MEANS FOR INDIES

BELTWAY BUZZWORDS

MEDIA CONSOLIDATION
MEDIA CONCENTRATION
VERTICAL INTEGRATION
HORIZONTAL INTEGRATION
ANTITRUST
MONOPOLY
OLIGOPOLY

THE PLAYERS

PRO-MEDIA CONCENTRATION:

- The Motion Picture Association of America (MPAA), the Recording Industry Association of America (RIAA), major media companies including Disney, Time Warner, Viacom, News Corporation, and Vivendi Universal, when media concentration is in their perceived interest.

ANTI-MEDIA CONCENTRATION:

- Organizations representing big companies and big companies, when their interests are adversely affected. (For instance, Disney took on Time Warner and AOL when they merged, because it feared the power that the merged company would have over Disney in negotiations over cable distribution of Disney's programs.)
- Organizations representing smaller broadcasters, programmers and cable businesses, and the smaller companies themselves; for instance, organizations representing independent producers and independent TV stations, small TV station groups, and independent radio stations.
- Consumer groups such as Consumers Union and Consumer Federation of America, which want prices to stay low and want competition.
- Citizen activists and civil liberties groups such as Common Cause and National Organization for Women (NOW), which seek to preserve diversity of voices and improve the quality of democratic self-governance.
- Organizations representing artists and small creative businesses in the media industry, such as the Association of Independent Video and Filmmakers (AIVF), International Documentary Association (IDA), and Center for the Creative Community.
- Organizations representing librarians interested in having diverse and affordable media.
- Unions such as the Communication Workers of America (CWA) and Screen Actors Guild (SAG), whose members work in the mass media, and the AFL-CIO, which is concerned generally about preserving coverage of controversial issues.

HOW MEDIA CONCENTRATION AFFECTS YOU

Big media companies want to get even bigger, and they are using the challenges of adjusting to digital as reasons why they need more freedom from regulation and more control. But when a few big companies own most of the media pie, independents lose because there are fewer companies to do business with, fewer opportunities for creative innovation and new grassroots voices, and more potential conflicts of interest for content.

This consolidation also means independents have less negotiating power, and that there are fewer stakeholders to challenge mass media companies when policy is made. The biggest existing players—the incumbents—have great incentive to keep things the way they are. Big media companies can shape the digital media future, if no one challenges them.

Background on Media Concentration

In the last half-century, media firms have gotten bigger in two important ways. First, companies have worked to get more control over the entire production pipeline, from creation to distribution to exhibition; this is "vertical integration." That way, a Warner or New Line Cinema film can easily get coverage on Time Warner-owned CNN, and TBS always gets onto Time Warner cable systems. Some 80 percent of what you see on prime-time TV is controlled by five vertically integrated companies: Disney, Viacom, Time Warner, Vivendi Universal, and News Corporation.

The other way companies have gotten bigger is by acquiring more of the same kinds of businesses; this is "horizontal integration." For instance, Clear Channel, now the largest owner of radio stations in the U.S., owns 1,200 stations nationwide. It grew rapidly after 1996, when Congress drastically loosened the limits on radio ownership. Clear Channel is also vertically integrated. It also owns radio programming networks, the Katz ad firm, and concert venues.

What happened to radio programming after 1996 is alarming for all indies. (Radio had been the least concentrated form of electronic mass media before the law changed, so it was easy to track the change.) As a study by the artists' group Future of Music showed, program formats became more standardized, several of them overlapped much of their content, and independent and experimental stations disappeared. Clear Channel has pioneered efficiencies such as using remote DJs, who pretend to be local, and of course favors its own standardized program packages.

Aren't there laws to stop monopolists and their cousins the oligopolists? Yes, antitrust law—a response to the excesses of the robber baron era—provides many useful checks. Public interest advocates used some of them when AOL and Time Warner merged. (See sidebar page 24.) But many measures of concentration used in other businesses don't work well with media. As well, antitrust law is interpreted by judges and regulators who have come to their posts during the deregulatory era kicked off in 1980. In the 1996 Telecommunications Act, Congress continued deregulation by loosening concentration limits and requiring the agency that interprets communications law, the Federal Communications Commission, to revisit its own rules every two years.

Even before 1996, deregulation had affected indies. For instance, in the early 1990s, the FCC relaxed the 1970s-era rule banning the networks from making and owning the programming they showed. The number of programs made by producers independent from the networks plummeted from 85 percent to about 20 percent. The difference? Indies have few places to go to if an idea gets turned down. As Emmy-award-winning writer Jonathan Rintels warned Congress, "a few enormously powerful companies control virtually every aspect of the work, not just who gets to write and produce the program, but the subjects and the treatment,

and who can direct and who can act, who can photograph and who can write the music. It is true both in network and on cable television."

CURRENT ISSUES

Media concentration issues are hot policy buttons at the dawn of the digital era. Many media companies argue that they need to get bigger to invest in the new businesses and new business models that the digital era permits. They promise, as AOL and Time Warner did, that if they can get bigger they will themselves usher in the new era, and if they can't society will be deprived.

At the same time, the businesses that were permitted to get bigger after 1996 have not delivered many promised new services. Most phone companies have not offered television programming, and most cable companies aren't offering phone service. There are few competitors for local phone service, and rather than converging different kinds of businesses, many companies have decided to concentrate holdings in their own field of play.

Will media concentration go unchecked, or will existing law and regulation be invoked to encourage competition and diversity? Will alternative business models for the development of mass media in the digital era be encouraged?

ON THE HORIZON

How much bigger should big media be permitted to get? For the last year, that has been a major issue at the FCC and in Congress. When the FCC attempted to further relax rules, a broad coalition of nonprofits, public interest think tanks, artists' organizations, and others put a spotlight on the issue and forced the FCC to hold public meetings. Congress has debated the issue, and the courts will revisit

APPROXIMATE NUMBER OF DAILY NEWSPAPERS IN NORTH AMERICA: 1800

APPROXIMATE NUMBER OF MAGAZINES IN NORTH AMERICA: 11,000

APPROXIMATE NUMBER OF RADIO STATIONS IN NORTH AMERICA: 11,000

APPROXIMATE NUMBER OF TELEVISION STATIONS IN NORTH AMERICA: 2000

APPROXIMATE NUMBER OF BOOK PUBLISHERS IN NORTH AMERICA: 3000

NUMBER OF COMPANIES OWNING A CONTROLLING INTEREST* IN THE MEDIA LISTED ABOVE IN 1984: 50

NUMBER OF COMPANIES OWNING A CONTROLLING INTEREST IN THE MEDIA LISTED ABOVE IN 1987: 26

NUMBER OF COMPANIES OWNING A CONTROLLING INTEREST IN THE MEDIA LISTED ABOVE IN 1996: 10

NUMBER OF COMPANIES OWNING A CONTROLLING INTEREST IN THE MEDIA LISTED ABOVE IN 2002: 6

FROM "NOW WITH BILL MOYERS" WEBSITE (PBS.ORG/NOW/POLITICS/MEDIA.HTML)

* "CONTROLLING INTEREST" REFERS TO OWNERSHIP OF A COMPANY IN SUCH A MANNER AS TO PERMIT FULL DOMINION OVER ITS OPERATIONS. FOR MANY REASONS, A CONTROLLING INTEREST CAN BE HELD WITH FAR LESS THAN 50% OF THE COMPANY OR OF ITS STOCK.

it. The question of how much bigger regulators should permit companies to be will not go away soon, especially because the FCC must revisit its own rules every two years.

When big companies merge and claim that digital made them do it, what will they do to justify the public interest in permitting them to merge? Companies are required to demonstrate that there is a public interest in the merger—either to the Department of Justice or the FCC, and sometimes also to the European Union if they are international in scope. What will stakeholders demand of them and of the regulators?

When media companies develop new digital services—say, the cable company gets into Internet services, or the phone company starts offering video on demand—whose regulations apply to the business? Right now, each company wants to make sure it gets the laxest regulation of its own services and the most protection from competitors. Stakeholders need to ask how the public good is being served. The digital era should create new freedoms for creators and users, not just for the biggest media companies.

How can indie producers get leverage in negotiations with big media companies? This problem surfaced boldly in 2002, when Discovery (which includes Discovery Channel, Animal Planet, Discovery Medical, Science, History, TLC and others) announced that it would eliminate traditional on-air end credits, moving them to its website instead. A large coalition of groups representing artists, including The Academy of Television Arts and Sciences, American Society of Cinematographers, International Documentary Association, AIVF and many others, formed the Documentary Credit Coalition to protest the move. When the Academy of Television Arts and Sciences told Discovery that if Discovery eliminated

VICTORIES FOR CREATIVE OPPORTUNITY

Creative coalitions have successfully challenged big media. In 1998, public interest groups played a major role in stopping the cable industry's efforts to kill the then-emerging direct broadcast satellite companies. When the cable companies sought to undercut these new satellite efforts by creating a cable-owned competitor called Primestar, consumer activists pressuring the Federal Trade Commission were able to block the deal.

A few years later, small ISPs, consumer groups, and others convinced the Federal Trade Commission to take some of the bite out of the AOL/Time Warner merger, by requiring AOL/Time Warner to adopt far-reaching "open access" requirements. For the first five years after the merger, the company would have to allow at least three competing ISPs onto its cable lines (offering independents and others a choice of service); it could not discriminate against other ISP's content; and it had to pay for a "monitor trustee," an expert in the field with the job of scrutinizing the company's trade practices supervised by the Federal Trade Commission. No media company has ever before had to abide by such requirements, which were effected only through coordinated public pressure.

end credits that its company's productions would not be eligible for Emmy awards, Discovery backed down.

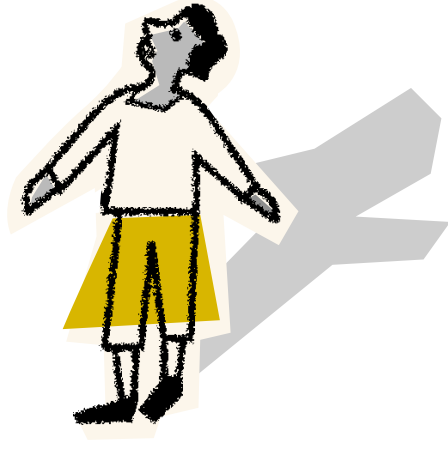
The issue won't go away, though. Programmers are all looking for more advertising time. AIVF and others have asked the FCC to require cable channels to publish end credits as proof that the programmers are buying programming from a variety of suppliers.

CONCLUSION

Big media companies can take advantage of public confusion over the opportunities of the digital era to demand ever-fewer controls on their business practices. But this is also a time when other stakeholders can have a surprisingly loud voice, especially in coalition.

ORGANIZATIONS THAT KNOW MORE

AIVF (AIVF.ORG)
CENTER FOR THE CREATIVE COMMUNITY (CREATIVECOMMUNITY.US)
CONSUMER FEDERATION OF AMERICA (CONSUMERFED.ORG)
CONSUMERS UNION (CONSUMERSUNION.ORG)
MEDIA ACCESS PROJECT (MEDIAACCESS.ORG)



WILL OUR Internet PROVIDERS shape OUR content choices?

stay as open as IT Is now?

WILL THE web

what is the future of the internet?

WILL INDEPENDENTS THRIVE IN THE AGE OF BROADBAND?

THE BELTWAY BUZZWORDS

NETWORK NEUTRALITY
OPEN ACCESS
BROADBAND
QUALITY OF SERVICE
WIRELESS FIDELITY OR WI-FI

THE PLAYERS

LET INTERNET PROVIDERS CONTROL CONTENT:

- Organizations representing major cable broadband providers, such as the National Cable and Telecommunications Association; big cable companies such as Comcast, and companies that own both a lot of content and cable pipes such as Time Warner.

LET CONSUMERS CHOOSE ISPS AND GO WHERE THEY WANT ON THE INTERNET:

- Microsoft, because it believes open broadband will create interesting applications that will lead people to buy more software.
- Disney (which has the smallest investment in cable of the major media companies).
- Companies such as Earthlink that have business plans around open access.
- Computer-based businesses such as Amazon, eBay, and Yahoo.
- Organizations representing electronics manufacturers, such as the Consumer Electronics Association.
- Nonprofits such as Consumers Union, Public Knowledge, Media Access Project, and Center for Digital Democracy.

INCONSISTENT POSITIONS ON ACCESS AND CONTENT:

- The major phone companies (such as Verizon, SBC, and Quest).

HOW BROADBAND AFFECTS YOU

The Internet has become the backbone of our ordinary communications, and its importance is only likely to grow. As the next generation of fast Internet—broadband Internet—develops, who will build it and how will they control it? The answers will affect how filmmakers use the Internet to upload, download, promote, research, and make their works. The most important providers of broadband service today—the cable companies—are developing their Internet services using a cable model. Are there other models?

BACKGROUND ON BROADBAND

The old Internet had an extraordinary design feature: the network itself—not really a network at all but a set of agreements on how to recognize and route information—was wide open for anyone to use. The scientists who designed it used ordinary phone lines to carry the information, and computers at both ends of a message to send and receive it.

This virtual network, which could be created by anybody hooking up and using the common agreements, grew using an existing, already-paid-for physical network: the phone company's. The phone company was historically barred from offering any content over its own lines and

was also then forced by law to let others rent its lines to offer Internet service over them. Thousands of Internet Service Providers (ISPs) did just that.

As Internet use grew far beyond the small band of scientists who designed it, it also became far less open. Firewalls, spam blockers, and other measures now put fences throughout the Internet. Meanwhile, both the amount of Internet traffic and the size of files people send have ballooned. Phone lines won't do the job anymore. They certainly don't for anyone using images, much less full-motion graphics.

Cable companies have become the major providers of the new faster Internet service—broadband Internet, which sends fat files fast, down fat cable pipes that are built and maintained by these companies. Phone companies also offer fast Internet, via DSL, but it's a little slower than cable and less popular. Today, a fifth of U.S. Internet users have broadband connections, and market analysts think that broadband will become standard within a decade.

There are two basic economic models for tomorrow's Internet; lawyer Chris Murray of Consumers Union calls them the electrical outlet or the remote control. An "electrical outlet" Internet provider would bill like the electrical company—on how much you use—and doesn't care what you do with the electricity. It just wants to you to use a lot of it. The "remote control" Internet provider wants you to use the service to get to its products. It does care what you do with it. That's the cable model.

The electrical outlet Internet model might also be called "open access" or "network neutrality"—a service where the provider does not get in the way of a customer's use of the service. That model, suggest many (none of them cable operators), is a way for the Internet to become whatever its users want it to be—including digital-age video-on-demand and virtual video archiving.

Cable operators have offered a very different kind of service at the dawn of next-generation Internet. They have blocked any competitors from using their networks, blocked their customers from becoming providers, and favored their own information over others' on the Internet.

CURRENT ISSUES

Competition: How many broadband services will there be? After intense political battles in the mid-1990s, the FCC said cable operators did not have to let competitors such as Earthlink or Erols attach to their broadband equipment. Phone companies did have to let competitors use their equipment, but dragged their feet since their cable rivals didn't have to, and they have now also won permission to refuse entry to competitors.

So most cable broadband subscribers only have two choices: the local cable monopolist or the phone company's service. (Many of them can't get DSL phone service, however, for technical reasons.) Time Warner cable broadband subscribers do have a choice, though—because stakeholders opposing the AOL and Time Warner merger insisted on the merged company letting competitors in as the price of merger.

BIG BROTHER AND BROADBAND

Most cable companies limit how much time any site can stream video to the company's broadband users—it's usually about 10 minutes. They say it's so everyone can use limited service, and they call big users "broadband hogs." But the limits are not because they don't have enough space, but because the "hogs" are really potential competitors for the eyeballs that the cable company want on its own programming. They are stamping out business rivals before they can start. As a result, it is only practical today to use the Internet to distribute shorts or trailers. A few sites like atomfilms.com have some longer format programming available for download. But the cable companies reserve the right to drop your site from their service if you use too much of their broadband.

Some ISPs, both cable and phone, are also trying to stop their customers from setting up wireless fidelity or "wi-fi" Internet routers. "Wi-fi" refers to a technology using unlicensed spectrum to transmit digital data. (For more on "wi-fi" see page 35.) Both Time Warner Cable and AT&T Broadband have sent cease-and-desist letters to organizations such as NYC Wireless and Bay Area Wireless Users Group, which promote wi-fi to the public.

Content control: Most cable operators have installed what they call "quality of service" software. This is software that manages network information flow. With this software, cable operators can make sure that their customers are not uploading more than the permitted few minutes of streamed content. (Cable operators do not want competing programs to use cable broadband service to bring it to their own customers!) They can ensure that outsiders' Web sites and services download more slowly than ones that they have invested in or profit from.

Network connections: Many cable operators want to be able to tell their customers what kind of equipment they can attach to the network. Some cable operators ban local area networks (linking up several computers in your home or work to the same Internet connection). And when Microsoft developed Xbox, it had to strike agreements with all major cable operators to ensure that the Xbox would hook up to the Internet on their systems.

In all of these issues, cable operators do not observe network neutrality, which is keeping the Internet open for anyone to design new uses, rather than creating a network that benefits primarily one kind of business.

ON THE HORIZON

Network neutrality will continue to be a hot policy issue, as new services evolve. Public interest activists have already won a lawsuit that means the FCC must uphold the open access architecture that was at the core of the old Internet. Cable stakeholders and their allies will not give up, though. The legal battles are only beginning — both in the courts at regulatory bodies like the FCC.

Mergers and concentration of ownership also affect the future of the Internet. Each time companies must get approval for mergers or new purchases, it is an opportunity to scrutinize the terms under which they offer Internet services. AOL was a major champion of network neutrality—until it merged with Time Warner. Cable operators must obtain franchises from the locality where they install wires. Much open access debate has taken place at city council hearings, and in some places, such as Portland, Oregon, activists have been able to win better terms. Open access will be a live issue with each cable franchise renewal.

If the FCC liberates some spectrum to help grow wireless internet fidelity or "wi-fi" networks (see "The Not-So-Distant Future of the Airwaves," page 33), wireless internet service providers will have a strengthened hand to provide some competition to the limited-choice services broadband customers have today.

media concentration meets video on demand

When the media giants throw their weight around, it can have a dramatic impact on new technologies and new players on the media landscape. Take, for example, the story of Intertainer.

In 1996, when Americans were first setting up dial-up accounts and learning about websites, Intertainer pioneered video on demand. Starting with backing from Microsoft, Comcast, and Sony, Intertainer first offered movies by request to cable subscribers. It quickly evolved into the first company providing movies on demand over a dedicated Internet connection to consumers with connections of 500 kbps of higher. Intertainer featured content from an unprecedented group of partners including Universal Pictures. Warner Bros., Dreamworks SKG, MGM, A & E Networks, NBC, PBS, Discovery, ESPN, Warner Music, EMI Music, and others.

By September 2002, Intertainer claimed 125,000 Internet subscribers and an additional 35,000 who received their cable-based service. Then in 2003, just as broadband seemed poised to take off, Intertainer closed shop.

Why? Three of the companies that signed distribution deals early on with Intertainer (Sony—one of Intertainer's investors—Time Warner and Vivendi Universal) are now investors along with other major media studios in a competing service called Movielink. Jonathan Taplin, Chairman and CEO of Intertainer, believes Movielink was set up so the big studios could control the prices and terms for digital distribution of their films. With Movielink in the picture, subsidiaries of companies named in the suit, such as Warner Bros. and New Line Cinema, started reneging on deals with Intertainer. Claiming fears about piracy, Warner's titles dropped from 80 in 2001 to just 6 a year later. Taplin has filed suit.

In an open letter to subscribers on its web page, Intertainer says it will be back "when there is an environment in which an independent company such as ours is allowed to compete for your business. Whether the current environment of increasing media concentration is good for our democracy is of course, the ultimate question."

CONCLUSION

The next-generation Internet could be the first-ever chance for independent filmmakers to distribute their works without a gatekeeper. It could be the delivery service for public media of the future. But just as policy created the terms of the first generation Internet, policy will determine whether the next-generation Internet is open or closed.

ORGANIZATIONS THAT KNOW MORE

CENTER FOR DIGITAL DEMOCRACY (DEMOCRATICMEDIA.ORG)

CONSUMER FEDERATION OF AMERICA (CONSUMERFED.ORG)

CONSUMERS UNION (CONSUMERSUNION.ORG)

MEDIA ACCESS PROJECT (MEDIAACCESS.ORG)


HOW WILL PUBLIC TV USE DIGITAL CHANNELS?
WILL WI-FI OPEN DOORS FOR ME?
DO WE STILL NEED TO MANAGE SPECTRUM IN A DIGITAL AGE?

THE NOT-SO-DISTANT FUTURE OF THE AIRWAVES

THE BELTWAY BUZZWORDS

SPECTRUM MANAGEMENT
SPECTRUM ALLOCATION
WI-FI

HOW SPECTRUM MANAGEMENT AFFECTS YOU

As a filmmaker, you have probably spent much more time thinking about how to get on the airwaves than about who manages them. But what happens next in the story of the U.S. airwaves is going to affect how you do business.

How Congress and the FCC parcel out the airwaves is of great importance. Who gains more control of spectrum, and under what terms, is going to shape the very nature of communications.

THE PLAYERS

KEEP SPECTRUM POLICY FAVORING INCUMBENTS:

- Organizations such as the National Association of Broadcasters (NAB), representing big spectrum holders in prime locations, such as broadcasters.

CHANGE THE SPECTRUM ALLOCATION:

- Organizations representing new spectrum users such as cellular companies and broadcasters, who want more spectrum, including Cellular Telephone and Telecommunications Association (CTIA), Wireless Communications Association International (WCA), Association of Public Television Stations (APTS), Catholic Television, Association for Maximum Service Television (MSTV), and Instructional Television Fixed Service (ITFS).

GET MORE SPECTRUM FREED UP FOR UNLICENSED USE:

- Organizations representing computer businesses and computer companies, especially Intel and Microsoft, which believe that this will stimulate computer and Internet use.

- Public interest think tanks such as the New America Foundation.

BACKGROUND ON SPECTRUM MANAGEMENT

Spectrum is the most essential part of mass media today. Our TVs, phones, radios, computers—not to mention our car alarms, door openers, and medical implants—all send and receive signals along different parts of the airwaves, specifically different frequencies of the electromagnetic spectrum. (A slice of spectrum contains a "band" of frequencies. The wider the band, the greater the capacity to carry information or the greater the "bandwidth.")

By law, spectrum belongs to the public, because it is something elemental, like air and water. But use of spectrum, like timber in the national forests, can be loaned, licensed, or auctioned by the federal government. The Federal Communications Commission was actually created in 1927 to be a spectrum traffic cop—to create order in the brand-new field of radio, where competitors were accidentally blocking each others' signals by sending them on the same part of the airwaves, or spectrum. Ever since, its decisions have profoundly affected how mass media develops.

PUBLIC TV'S DIGITAL CHALLENGE

What will public TV stations decide to do with their new digital channels? Will these channels provide opportunities for independent filmmakers or not?

The first challenge public TV stations face is paying for the expensive equipment to broadcast digitally, and the second is finding programming they can afford to air. (So far, Congress has required public TV stations to go digital, but not provided full funding for conversion.)

The third challenge is making sure that cable and satellite TV viewers—now more than 80% of the nation's viewers—get to see those digital broadcast channels on their pay services. Cable companies, with satellite TV companies watching closely, have so far refused to guarantee space on their lineup for new digital channels.

As stations scramble to outfit themselves digitally, they have also been experimenting with strategies.

Some public TV stations such as KCTS in Seattle and WETA in Washington, D.C., have been leaders in pioneering high-definition TV. But with few HDTV receivers and high production costs, stations are still trying to figure out how to make the most use of their experience.

Some stations are increasing ties with local organizations and boosting production of local programming. One model is what Minneapolis-St. Paul station TPT does with its Minnesota Channel, a digital channel. It partners with local nonprofits, which put up the cash for small production budgets and gain TPT's expertise and studio.

Some have proposed selling at least some use of this additional spectrum to commercial users, whether to big companies for data transfer or to commercial programmers. Then revenues could pay for public broadcasters' own productions and projects. Some independent filmmakers, with others, have called on public TV to clarify how revenues generated by such approaches would be accounted for and used.

The FCC lets different businesses use different frequencies. For instance, TV channels take one set of frequencies, and mobile phones use another. That way, cell phone calls don't interfere with television programs. The most valued frequencies for communication are the ones that can most easily pass through objects—from 3 kilohertz (kHz) to 300 gigahertz (GHz).

Broadcasters have always been given some of this choicest part of the spectrum for free, in exchange for public service. The public service most commercial stations actually provide, beyond airing ad-supported "free" TV, is minimal—such as a few hours of children's programs and offering political candidates low-cost ads.

Spectrum assignments have sometimes directly benefited independent filmmakers. In the 1980s, entrepreneur John Schwartz won a bid for an obscure bit of spectrum allocated for instructional TV. With the proceeds from his business subleasing this spectrum, he packaged and syndicated indie programming under a single brand, *The '90's*, which has now become Free Speech TV.

Free Speech TV is largely supported by a foundation Schwartz established to manage the profits from his spectrum-rental business.

CURRENT ISSUES

Digital has vastly changed how spectrum can be managed. New digital technologies permit ways to "share" spectrum, and digital TV creates different spectrum needs. The FCC has tremendous power to help or hinder the development of new technologies based on how it allocates spectrum.

In the 1990s, the FCC began to change how it gave out spectrum, and the law changed too. This has created some hot issues: digital channels, auctions, and unlicensed spectrum. Each issue will affect distribution.

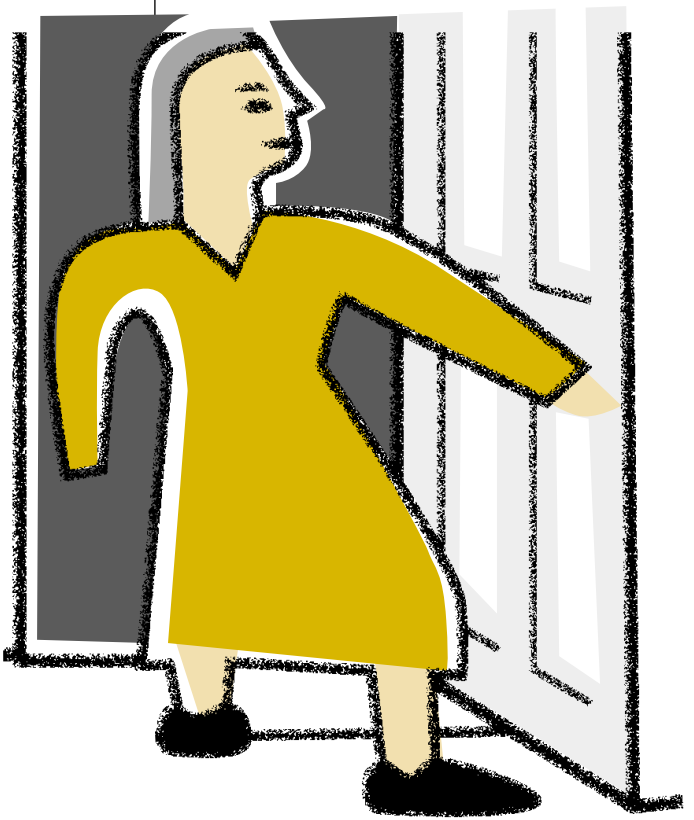
Digital channels: In the 1990s, anxious about the digital transformations ahead, commercial TV stations lobbied hard for Congress to double their spectrum, promising to offer "high-definition TV" (HDTV). They actually didn't know what they were promising—the technology kept changing faster than their plans, redefining HDTV and multiplying the number of channels any given spectrum allotment could carry.

The 1996 Telecommunications Act granted all broadcast station owners, including public broadcasters, a new chunk of spectrum, added on to their existing allocation. In exchange, all broadcasters were to deliver, within a few years, several new digital channels plus a high-definition channel. And when 85 percent of us had digital TV sets, the broadcasters were to give back the old spectrum they now broadcast on.

But TV stations are still installing very expensive hardware, and no one is sure how high-definition and digital programming will be paid for. Meanwhile, despite the public service conditions of their original spectrum grants, what broadcasters should do for the public interest with their new spectrum has never been made explicit. Public broadcasters have depended on Congressional appropriations for their building costs, but Congress has not provided the whole amount, and digital building takes money away from other projects. Public broadcasters also have no new sources of revenue to program the new channels.

Auctions: The FCC experimented with auctioning spectrum in phone businesses in the 1990s and might expand that model—even though some auctions ended up with high bidders being unable to pay up. Auctions are highly controversial—in the past, the FCC had always leased, not sold, rights to use this public good.

Unlicensed spectrum: Very short-range and very low-power wireless devices such as remote controls, cordless phones, and baby monitors don't need to get an FCC license to use the bandwidth allocated to these kinds of uses. The new "wi-fi" (for wireless fidelity) devices you can get for your computer also use this part of the spectrum. Wireless Internet Service Providers have used this low-cost technology to develop broadband networks, especially in rural areas. This model could grow dramatically, and many more people could use wireless networks, if there were more unlicensed spectrum.



ON THE HORIZON

How the FCC handles parceling out spectrum in the next few years will affect digital distribution.

What public services will the American public, through the FCC, expect of broadcasters in exchange for their digital spectrum? As the new business models of digital broadcasting evolve, artists and citizens will have the right to expect broadcasters to honor the public interest obligations that they incur for free access to spectrum.

Some argue that the FCC might not, in the future, have to allocate spectrum at all—if it pushes the development of "spread spectrum," which uses digital technology to route signals on a moment-by-moment basis through a crowded "highway" of the airwaves. However efficient that might be, many current spectrum holders resist the idea, because it would dramatically alter their business models.

If the FCC continues to refine its processes of auctioning of spectrum, indies and other stakeholders have the right to ask how the public will benefit from these sales. One proposal, launched by Lawrence Grossman and Newton Minow, is to dedicate a small portion of revenues to a trust fund for public culture. This project called, Digital Opportunity Investment Trust (DOIT), has cultivated a coalition of supporters.

The FCC could also take some spectrum away from current holders and open up more unlicensed spectrum—creating new possibilities for a user-built access road to the Internet. The reallocation will be painful for some—especially current spectrum holders—and good news for others. For filmmakers, both as makers and as

distributors, the growth of a user-built network would bring new opportunities.

CONCLUSION

Spectrum allocation is at the heart of the telecommunications future. Every communications business knows how valuable it is. How it is set up shapes how we communicate and how diverse our media landscape is.

Indies can benefit from spectrum uses that encourage new distribution methods, including grassroots distribution that opens up new channels and that lowers costs of all kinds of distribution. Indies might also benefit from the multiplication of channels with digital broadcasting.

ORGANIZATIONS THAT KNOW MORE

CONSUMERS UNION (CONSUMERSUNION.ORG)
CONSUMER FEDERATION OF AMERICA (CONSUMERFED.ORG)
DIGITAL OPPORTUNITY INVESTMENT TRUST (DIGITALPROMISE.ORG)
MEDIA ACCESS PROJECT (MEDIAACCESS.ORG)
NEW AMERICA FOUNDATION (NEWAMERICA.NET)

WHAT DOES PUBLIC SUPPORT MEAN TO ME?
HOW CAN I PROTECT PUBLIC DOLLARS?
DOES DIGITAL THREATEN PUBLIC SUPPORT?

zeros, ones, and public money: how digital impacts indie funding

the beltway buzzwords

public broadcasting
appropriations
franchising
digital channels
digital divide

how public support affects you

Independent filmmakers create challenging work, pioneer innovation, and represent diverse points of view. Because their work is driven less by profit than by vision, indies rely heavily on public funds and on public institutions such as public TV. Public support often helps them get private funding.

Public funding and institutions for the arts, however, are perpetually imperiled. Because digital filmmaking appears to make production cheaper and distribution more accessible, and with budget crises everywhere, critics argue that digital opportunities reduce the need for public funding.

Independent filmmakers need to support both public funding and public media institutions—nurturing forces for creativity and opportunity.

the players

backing public support for independent media:

- Public media professionals and their associations (such as The Association of Public Television Stations and Alliance for Community Media); creators' and artists' groups (such as Association for Independent Video and Filmmaking and National Alliance for Media Arts and Culture); arts nonprofit organizations (such as Center for Arts and Culture); librarian groups (such as American Library Association); and school and college organizations and unions (such as National Education Association).

opposing public support for independent media:

- Cable and satellite companies now required to honor public access requirements.

varied positions on support for independent media:

- National, state, and local politicians fall on both sides of this issue, depending on ideology, constituent base, and budget considerations.

background on public funding and access

The United States relies predominantly on private, not public, dollars to support culture. Overall, only 5 percent of arts funding in the U.S. comes from taxpayers; the rest comes from members, foundations, corporations, and earned revenues.

The entertainment industry has flourished under these terms, and some kinds of art—opera, classical music, and fine art—have been major beneficiaries of charitable giving, corporate donations, and member support money. But independent filmmakers have struggled under this

model that depends on private largesse. The institutions created since the Great Society days of the 1960s—public broadcasting, the National Endowments for the Arts and Humanities and their state counterparts, cable access, and public channels on satellite TV have been crucial for indies.

CURRENT ISSUES

Indies depend on funds coming from federal, state, and even local sources. Each pool of money depends on negotiations in Congress, state legislatures, and city councils. These negotiations are always politically charged.

The National Endowments for the Arts and Humanities are critical resources for development and start-up funds. Besides each providing almost a million dollars a year directly to media projects, they also provide almost half of the money that runs state and local humanities councils. Although the dollar figures are small, these federal, state and local grants are critical because they fund the first stage, and they convince other funders to give money.

THE MINORITY CONSORTIA

The Minority Consortia are five organizations funded by the Corporation for Public Broadcasting committed to developing culturally diverse programming for public television: Latino Public Broadcasting (LPB), National Asian American Telecommunications Association (NAATA), National Black Programming Consortium (NBPC), Native America Public Telecommunications (NAPT), and Pacific Islanders in Communications (PIC).

Over the last decade, NEA and NEH resources have been reduced steadily, and the NEA is no longer able to give grants directly to filmmakers. Tax cuts and economic crises have also ravaged state and local budgets for arts and humanities councils.

Public television (PTV) gets the most viewers for independent filmmakers in the country, and most importantly, gets national coverage for independent work—through PBS program "strands" such as *Independent Lens* and *P.O.V.* (and, to a lesser extent, *American Experience*, *American Masters*, *Frontline*, and *Frontline/World*). PTV also directly funds innovative and diverse work through ITVS and the Minority Consortia. (See sidebar on this page.)

As a whole, PTV is another example of culture mostly funded by the private sector, including annual contributions from millions of families and individuals to their local stations. But public funds are essential to keeping it alive, and for indies this funding is critical. ITVS and the Minority Consortia get almost all their funds from taxpayers through the Corporation for Public Broadcasting (CPB), the private nonprofit that channels federal funds to public television and radio. When CPB's budget gets trimmed, the limited amount of funds that go to fund indie production is greatly at risk. The PBS strands showcasing indie work are the least likely to have private funding.

Public television's taxpayer dollars for CPB come up for discussion regularly in Congress, when money is first authorized and then appropriated. PTV funding is also in discussion in many state legislatures, especially those that have public television state "networks." Getting

these dollars is always a political negotiation in which constituents' voices matter a lot. In the mid-1990s, when PTV's public funding was under attack, broad grassroots public support made the difference in keeping it.

Independents have also benefited from public access cable channels. These free channels, part of the basic cable package and open to anyone in the public who wants to make and air video, are available in some 1,500 localities. They exist wherever community activists have pressured the cable companies and their own local governments to add this requirement to cable's required contract—or franchise—with the city. Cablecasting a million hours a year, cable access channels provide indies with a valuable place to experiment, and to have access to equipment and an outlet for their work.

Public channels on satellite TV are also the result of citizen activism. Indies, colleges, and other potential users of satellite TV time banded together to win legislation requiring satellite TV owners to dedicate a small amount of space for public channels. For example, Link TV (formerly Worldlink TV), a nonprofit programmer founded with the support of ITVS and Internews in 1999, is available in over 20 million homes, offering international programming and world music.

In many cities, media arts centers, originally funded by the NEA and supported over years with foundation and membership donations, have nurtured emerging independents and given them space to show work. And as digital production has become more common, the thousand-plus community technology centers in the U.S.—places where, often with public funds, neighbors can get computer training and Internet access—are also becoming digital media creation sites.

On the Horizon

The digital era brings new strains to public media and public support for culture. Some argue that digital means you never have to fund culture anymore—that cheap production and unlimited channels create the ideal free market conditions for indies to flourish. But as this primer shows, policies inevitably shape the marketplace, making "the free market" a chimera. Furthermore, digital equipment has not actually brought down production and distribution costs. Even the new freedoms that digital brings can also bring problems. For example, public broadcasting producers and programmers face an unprecedented flood of project proposals and applications without a corresponding growth in resources to process them.

Perhaps the most immediate digital challenge for PTV is handling the opportunity that digital channels provide. In 1996, Congress gave local PTV stations the responsibility of launching digital channels—which means massive capital investment and continuing high maintenance costs. How will these stations pay for the investment? How will they pay for more programming to put on them? Will cable companies put these new channels on their cable lineups? Will indies benefit? Will public TV be able to use this new space for creative independent work, or will it need to rent it out to commercial interests? Or both? Public TV stations argue that they need more money than ever before, to accomplish the transition to digital. At the same time, many people—allies and opponents alike—ask what public TV will do that merits public money for digital channels .

The digital era brings new challenges to cable access as well. The advent of broadband Internet has changed accounting at cable companies. They are now permitted

A HISTORY OF ITVS

The Independent Television Service (ITVS) grew out of a decade-long effort urging Congress to make good on its 1978 commitment: that a substantial portion of public television funding go to independent producers. Mobilizing a coalition of diverse arts organizations, both national and regional, a committed core of independents fought to strengthen public television's capacity as a catalyst for change and cultural dialogue. The result: in 1988, after a decade of a sustained and successful effort, Congress directed CPB to establish ITVS, which opened its doors in 1991.

By the end of 2003, with the support of CPB, ITVS had helped indies fund, produce, and present more than 400 documentaries, dramas and other programs for PBS—programs that represent underrepresented communities, win the highest industry awards, and reach millions of viewers each year. Through its Web and community outreach initiatives, and as presenter of the PBS primetime series *Independent Lens*, ITVS continues to develop new ways to help independents connect with the largest and most relevant audiences.

to exclude income from their broadband businesses when calculating how much they have to pay for cable access centers according to local franchise agreements. Will the "franchise fee" model be enough to keep cable access alive in the digital era?

The changing nature of the digital divide has affected community technology centers, which could become new community resources for indies. As equipment and Internet access have become more common, and as economic community development funds continue to be cut, these centers increasingly find themselves in budget crises. And yet the gap between haves and the have-nots continues to affect opportunity in the digital age.

CONCLUSION

Filmmakers can make powerful arguments that public funding for culture matters to everyone. Artists' voices at appropriations time have a surprisingly heavy weight, and because local and state resources provide crucial leverage, filmmakers can make a difference at every level. Filmmakers also have a powerful role to play in public broadcasting, by asking the best out of our public media in a time of change and by asking policymakers to provide the resources to make the public media ecosystem flourish.

ORGANIZATIONS THAT KNOW MORE

ALLIANCE FOR COMMUNITY MEDIA (ALLIANCECM.ORG)
ASSOCIATION OF INDEPENDENT VIDEO AND FILMMAKING (AIVF.ORG)
ASSOCIATION OF PUBLIC TELEVISION STATIONS (APTS.ORG)
CENTER FOR ARTS AND CULTURE (CULTURALPOLICY.ORG)
COMMUNITY TECHNOLOGY CENTERS' NETWORK (CTCNET.ORG)
NATIONAL ALLIANCE OF MEDIA ARTS AND CULTURE (NAMAC.ORG)
NEW YORK FOUNDATION FOR THE ARTS (NYFA.ORG)

DIRECTORY OF ORGANIZATIONS

ALLIANCE FOR COMMUNITY MEDIA (ALLIANCECM.ORG) is a nonprofit, national membership organization committed to assuring everyone's access to electronic media. The Alliance represents more than 1,000 Public, Educational and Governmental (PEG) access organizations and community media centers throughout the country.

ALLIANCE FOR DIGITAL PROGRESS (ALLIANCEFORDIGITALPROGRESS.ORG) is a broad-based group of companies, associations, consumer organizations, and public interest groups. ADP believes that the best ways to meet consumer expectations and fight piracy include market-driven efforts to educate consumers, create digital distribution strategies, develop innovative technology, and enforce existing laws.

AMERICAN LIBRARY ASSOCIATION (ALA.ORG) is the oldest and largest library association in the world, with more than 64,000 members. Its mission is to promote the highest-quality library and information services and public access to information.

ASSOCIATION OF INDEPENDENT VIDEO AND FILMMAKERS (AIVF.ORG) publishes The Independent Film and Video Monthly. AIVF supports independent producers and advocates for the media arts field.

CENTER FOR ARTS AND CULTURE (CULTURALPOLICY.ORG) is an independent think tank that aims to broaden and deepen the national conversation on culture and cultural policies.

CENTER FOR THE CREATIVE COMMUNITY (CREATIVECOMMUNITY.US) is a Washington-based organization advocating the common interests of artists, including writers, directors, producers, performers, musicians, and other talented people who give life to popular and literary works of art and entertainment.

CENTER FOR DIGITAL DEMOCRACY (DEMOCRATICMEDIA.ORG) is committed to preserving the openness and the diversity of the Internet in the broadband era and to realizing the full potential of digital communications through the development and encouragement of noncommercial, public interest programming.

COMMUNITY TECHNOLOGY CENTERS NETWORK (CTCNET.ORG) brings together agencies and programs that provide opportunities whereby people of all ages who typically lack access to computers and related technologies can learn to use these technologies in an environment that encourages exploration and discovery and, through this experience, develop personal skills and self-confidence.

CONSUMER FEDERATION OF AMERICA (CONSUMERFED.ORG) gives consumers a well-reasoned and articulate voice in decisions that affect their lives. CFA is first and foremost an advocacy organization, working to advance pro-consumer policy on a variety of issues before Congress, the White House, federal and state regulatory agencies, and the courts.

CONSUMERS UNION (CONSUMERSUNION.ORG) is the publisher of Consumer Reports, is an independent, nonprofit testing and information organization serving only consumers.

CREATIVE COMMONS (WWW.CREATIVECOMMONS.ORG) is devoted to building a layer of reasonable, flexible copyright in the face of increasingly restrictive rules. Creative Commons is housed at and receives generous support from Stanford Law School, where Creative Commons shares space, staff, and inspiration with the Stanford Law School Center for Internet and Society.

ELECTRONIC FRONTIER FOUNDATION (EFF.ORG) is dedicated to preserving important freedoms in an online age through litigation and public education. The EFF has taken on legal cases in which DRM and the DMCA threatened free speech, personal privacy, and scientific research.

MEDIA ACCESS PROJECT (MEDIAACCESS.ORG) is a thirty-year-old nonprofit tax-exempt public interest telecommunications law firm, which promotes the public's First Amendment right to hear and be heard on the electronic media of today and tomorrow. MAP's work is in the courts, the FCC, and in active outreach as a coalition builder among other public interest organizations.

NATIONAL ALLIANCE FOR MEDIA ARTS AND CULTURE (NAMAC.ORG) is a national association of nonprofit organizations and individuals committed to furthering the media arts: film, video, audio, and digital.

THE NEW AMERICA FOUNDATION (NEWAMERICA.NET) is an independent, nonpartisan, nonprofit public policy institute that was conceived through the collaborative work of a diverse and intergenerational group of public intellectuals, civic leaders, and business executives. The New America Foundation has published *The Citizen's Guide to the Airwaves*.

NEW YORK FOUNDATION FOR THE ARTS (NYFA.ORG) is a statewide service organization for artists that provides free national information resources for artists in all disciplines and for those who support them in any way.

PUBLIC KNOWLEDGE (PUBLICKNOWLEDGE.ORG) is a nonprofit organization that advocates a fair and balanced approach to copyright and technology policy.

GLOSSARY OF TERMS

ANALOG BROADCASTING The current broadcasting standard uses an analog or wave-based signal to beam information to televisions, radios, or other devices.

APPROPRIATIONS Allocation of a portion of a budget, made by a fiscal body such as Congress, a county council, a city council, a town board or a school board.

BANDWIDTH Available space on which one computer can send data to another through a particular connection in a certain amount of time. The more bandwidth available, the faster you are able to access information.

BROADBAND High-capacity, high-speed transmission of digital data (video, voice, and data) over the Internet.

COPYRIGHT A set of rights relating to the reproduction, distribution, and performance of original literary, musical, dramatic, or artistic works, films, sound recordings, broadcasts and other matter.

DATA COMPRESSION Technique of reducing the amount of storage required to hold a digital file, to reduce the disk space the file requires and allow it to be processed or transmitted more quickly.

DIGITAL BROADCASTING A method of producing, broadcasting, and receiving television signals using digital technology to convert sound and pictures into a series of digits in much the same way as a computer stores data.

DIGITAL CONVERGENCE The merging of audio, video, and other information into a single universal code that can be delivered from any device to any other device.

DIGITAL CONVERSION The process of transforming an analog or wave-based signal into a digital signal of zeros and ones. This conversion samples data points along the continuous analog wave, with the resulting quality depending on the number of samples taken. In public TV, "digital conversion" refers to launching digital channels and preparing to retire analog channels.

DIGITAL MILLENNIUM COPYRIGHT ACT (DMCA) Enacted in 1998, the DMCA criminalizes the breaking of digital encryption of content.

DIGITAL RIGHTS MANAGEMENT (DRM) A set of technologies that permits content owners to set conditions digitally on the use of their products.

DIRECT BROADCAST SATELLITE (DBS) Service that allows households to receive television programming directly from satellites on small satellite dishes.

ENCRYPTION A method of scrambling or encoding data to prevent unauthorized users from reading or tampering with the data. Only individuals with access to a password or key can decrypt and use the data. The data can include messages, files, folders, or disks.

FAIR USE A copyright principle based on permitting the public is entitled to freely use portions of copyrighted materials for purposes of commentary and criticism.

FREQUENCIES Any of the electromagnetic waves that are used for radio and television transmission.

HORIZONTAL INTEGRATION When firms in the same industry merge.

INTELLECTUAL PROPERTY (IP) Copyright, trademark, and patent protections that turn creative work into protected property.

INTERNET SERVICE PROVIDER (ISP) An ISP is a company that provides access to the Internet to organizations and/or individuals. Access services provided by ISPs may include Webhosting, e-mail, and other services.

LIMITED MONOPOLY The limited period of time during which the creator of a work of art or a patent holder has copyright protection.

MEDIA CONSOLIDATION AND MEDIA CONCENTRATION
The trend of an ever-smaller number of media companies owning the means of producing and distributing mass media content.

OPEN ACCESS For broadband Internet, the freedom to choose from multiple ISPs regardless of which company is selected for broadband service. This is the same openness consumers now enjoy with regard to dial-up Internet connections.

PEER-TO-PEER OR P2P Networks that connect individual users directly with each other, allowing them to share files.

PUBLIC DOMAIN Content available to the public at no charge because the copyrights, trademarks, or patents have expired or somehow been nullified.

SPECTRUM MANAGEMENT How the U.S. government sets up use of electromagnetic spectrum in this country. "Unlicensed spectrum" refers to those parts of the spectrum that the FCC does not license.

VERTICAL INTEGRATION An arrangement whereby the same company owns all or many of the different aspects of making, selling, and delivering a product or a service.

WIRELESS FIDELITY OR WI-FI A wireless networking technology that allows multiple devices to share a single high-speed Internet connection over a distance of about 300 feet. It can also be used to network a group of PCs without wires.

continued from page 7

DIGITAL PROJECTION A means of transmitting a digital image from a specialized display onto a large screen. For movies, two leading means of large-scale projection are via LCD (liquid crystal diode) and DLP (Digital Light Processing). Current digital projection technology might not look better than a carefully projected new film print.

DIGITAL VIDEO RECORDER A VCR with a hard drive that adds a layer of TV schedule information and the ability to record multiple programs simultaneously, skip commercials, and easily be set to record automatically. A typical DVR can hold up to 80 hours of television at any time. DVR pioneers such at TiVo and Replay face serious competition from major cable and satellite providers such as Comcast and DirecTV, who now provide their own PVR systems. Also known as Personal Video Recorder (PVR)

DIGITAL VIDEOTAPE A plastic tape with a magnetic coating that records, plays, and translates digital ones and zeros that represent moving images and associated sound.

DIVX An MPEG-4 video technology from DivXNetworks.

DSL Digital subscriber lines. DSL use the phone system originally developed for low-quality voice transmission to deliver digital data at speeds many times faster than dial-up modems (which also use this phone system).

DTV U.S. standard for digital broadcast of television, with encoding based on MPEG-2. Compared to analog television, DTV allows superior image and sound, greater interactivity, more channels, and more efficient use of broadcast spectrum—but it depends on broadcasters and consumers to adopt the new technology. Although HDTV is part of the DTV standard, broadcasters aren't required by the FCC to transmit HDTV signals.

DVD Digital Versatile Disc (previously Digital Video Disc). An optical disc technology similar to CD, but with a much greater data capacity. A basic DVD holds 4.7 GB of data, enough for a two-hour movie when compressed with MPEG-2 (the DVD video compression standard). Dual-layer and double-sided discs hold even more data.

DVD PLAYER Electronic device for playback of DVD discs.

FLASH An authoring tool and a file format from Macromedia that allows compact, but high-quality interactive animations to be delivered over the Web.

GAME CONSOLE A specialized, powerful and inexpensive media computer dedicated to gaming. With increased processing and graphics performance, along with growing Internet and DVD features, consoles such as the Sony PlayStation or Microsoft Xbox are racing towards convergence with other computers.

HD VIDEO High-definition video typically has a 16:9 aspect ratio similar to feature films and usually has a resolution of either 1280 x 720 or 1920 x 1080 pixels. The first resolution is known as 720p, with the "p" indicating image is displayed in on continuous progressive scan, as on a computer screen. The second is known as 1080i, with the "i" indicating the image is displayed as two interlaced fields, as on a standard television set. Although HD video can and is used to create broadcast HDTV, it isn't limited to that use.

INTERACTIVE TELEVISION ITV is a really simple computer combined with a television set, giving viewers more control of a given program. Through a set-top box and special features developed by show producers, viewers can vote, play games, and buy products shown on a program.

MINI-DISC Designed for home users as a digital replacement for blank and pre-recorded audiocassette tapes, the mini-disc was largely swept aside by MP3 files, MP3 players, and similar devices. However, many recording enthusiasts and radio producers, as well as some visual media producers have adopted the format because of its small size, relatively low cost, and decent audio quality.

MP3 MPEG-1 Audio Layer 3. Finalized in 1993, the compressed digital audio format made famous by millions of people trading other people's music over the Internet is actually part of the first MPEG standard. When carefully handled, MP3 files can sound almost as good at the RedBook audio found on audio CDs, but at much smaller file sizes.

MPEG Motion Pictures Expert Group. Used to describe both the people who create standards for digital audio and video compression and encoding, and the standards themselves.

MPEG-1 Encodes video and audio at a data rate appropriate for CD media, up to about 1.5 million bits per second (Mbps). MP3 (MPEG-1 Audio Layer 3) grew out of the MPEG-1 standard.

Currently used for Video-CD (mostly overseas) and for some Web video.

MPEG-2 Encodes video and audio at a data rate up to 4 million bits per second (Mbps). MPEG-2 is the standard for digital television broadcasting (DTV), including HDTV, and for DVD.

MPEG-4 A codec that's popular for video destined for computers and wireless devices, but also includes thousands of pages specifying how media interact with other media, and how users interacts with it.

MPEG-7 Establishes a framework for describing and searching digital video and audio content.

MPEG-21 Will establish a new "Multimedia Framework," but much work remains.

PDAs Personal Digital Assistants. Small hand-held devices, such as Palm and Pocket PCs, that can keep schedules, contact lists, and can increasingly connect to the Internet, display Web pages, and play Web video files.

PERSONAL COMPUTER A computer designed to be used by one person at a time.

PORTABLE MPEG-4 PLAYER Personal, portable players that work with highly compressed video formats (such as MPEG-4, Windows Media, and Apple QuickTime), letting individuals download, carry, and watch just what they want to view.

QUICKTIME Apple's digital media architecture. (More information: www.apple.com/quicktime)

REALVIDEO Real Networks' Web video system, and specifically their video codec. (More information: www.realnetworks.com)

REDBOOK AUDIO The digital encoding standard used in audio CDs.

SD VIDEO Standard-definition video. In North America, a video image with, typically, a 4:3 aspect ratio, 525 lines of interlaced resolution (in an analog signal) running at approximately 60 fields per second. In digital terms, standard-definition video has an image size of 720 x 486 pixels.

SERVER COMPUTER Any computer, including yours, that acts as a source of data to another computer. Large servers (Ebay's, Amazon's, Google's) and small peer-to-peer servers can transform video distribution.

SMART RADIO A radio receiver and/or transmitter that can be reprogrammed to work with different transmission, encoding, and modulation signals. Also known as software-defined radio. A key benefit: much more radio communication can take place than current radio spectrum regulation allows.

SMART TELEVISION A television receiver and/or transmitter that can be reprogrammed to work with different transmission, encoding, and modulation signals. As with software-defined radio, smart television theoretically could allow many more people to broadcast over the airwaves.

VCR Video Cassette Recorder. Consumer videotape player and recorder, usually analog (VHS), but consumer-grade mini-DV recorders are digital.

VIDEO PHONES Cell phones and other wireless devices that transmit basic video images as well as sound. (See 3G and WAP.)

VOIP Voice Over Internet Protocol. A means of using the Internet to transmit phone calls.

WAP Wireless Application Protocol, a specification proposed by several mobile phone companies to standardize how cell phones, radios, and other wireless devices are used for Internet access (e.g., e-mail, Web). If WAP or a similar proposal, catches on, then a WAP device from any company could work any other WAP device.

WI-FI Wireless Fidelity; officially, the IEEE 802.11 specifications. A standard for short-distance (about 50 meters unless modified) wireless data networks. Originally used mainly with computers, now starting to be integrated with other consumer electronics.

WINDOWS MEDIA Microsoft's digital media architecture.

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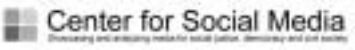

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