

Chapter 10

How Cinema Is Digital

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Filmmaking has traditionally been a very structured, expensive, and hierarchical process. Digital technologies open up new mechanisms and processes, which can offer alternatives to the stable systems of production, distribution, and exhibition. There has been a paradigm shift as digital and computer technologies are changing the parameters for how movies are made, distributed, and seen. Acting as a survey of the current landscape, this chapter examines the process of moviemaking and what methods, producers, cooperations, and communities are enabled by the influx of digital technologies. It explores how digital technologies are altering the nature of moviemaking, some of the affordances provided, and the ways in which they are already being exploited by creative and often amateur moviemakers.

A common theme throughout the three sections of this chapter is the formation of new relationships between filmmakers and their audiences, some global and electronic and some local, but each opening new spaces for communities. From production to distribution to exhibition, the cinema experience has become much more collaborative, with audiences involved often from pre-production stages to voting on movies in electronic film festivals. This is a definitive change in the classic moviemaking paradigm, where a few entertained the many through a stable and hierarchical system, and where cinema was experienced exclusively as a mass medium as opposed to a new medium. As a new medium, cinema becomes participatory, nonhierarchical, mobile, mutable, and characterized by excess as opposed to scarcity.

Production

Making a movie on 35-mm film is difficult, expensive, and time consuming. A lot of people and machinery have to be in the same place at the same time. There are focus pullers, gaffers, best boys, key grips, cranes, and tracks. Film theorist Jean-Pierre Geuens in *The Digital World Picture* describes his time on the sets of film shoots. He writes, “As for the actual filming, it looked and felt like a ritual whose

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formalized arrangements had been set long ago.”¹ He describes the repetition of the scenes under the cadence of the director’s commands; the anxiety of the camera operators faced with the uncertainty of not knowing until days later if the lighting, focus, and framing had worked nor what images had ended up on the celluloid; and the specialists, the apprenticeships, and the danger to actors and stunt people and even the editor due to the “potentially explosive nature of the film’s nitrate base.” He describes the threat of camera jams and accidents where “despite all precautions, a hair on the gate, a light leak in a magazine, or inexplicable mishaps at the lab can still destroy hours and hours of hard work.”² This difficulty and threat of disaster made moviemaking a ritual, with specialized clergy and a bit of a miracle at the center for it all to come together. The film medium required time and money, a very particular set of specialists, equipment, and a certain hierarchy, which the digital medium does not necessarily require.

All Movies Are Digital

Digital technologies have penetrated all levels of the production and post-production of movies. Many of these developments are non-obvious, taking place in processes of moviemaking that are well behind the scenes. This chapter illustrates that although on the surface the majority of movies may appear unchanged, in fact, large transitions in the processes of moviemaking are occurring at every level beyond just image capture. These levels are not always obvious to the viewer and do not necessarily change the “product” in obvious ways. Yet, each of these very available technologies has the potential to open up processes and make moviemaking easier and more mobile at all levels from Hollywood to home movie.

For example, at the start of the process, movies are being written collaboratively with digital technologies. Scriptwriting software is widely available and often comes with functionality for collaborative writing, or online sharing tools are easily accessible. Production Web sites, blogs, and social networks allow audiences to begin interacting with filmmakers during the making of a movie. Movies are being cast and staffed through social networks and online sessions, allowing filmmakers to work collaboratively from different locations. Filmmaking how-to’s are widely available online so that apprenticeships and mentoring can be virtual and dispersed. Scheduling and budgeting software has become available to the prosumer market and even funding is becoming a possibility online through sites such as Fundable, IndieGoGo, and ArtistShare. The film shot on a particular day used to be sent off to be developed overnight and then the “dailies,” the developed raw footage of the day’s shooting, would be screened for the director and cinematographer a day or two later so that they could see how the shot had gone. Digital technology enables this process to be simultaneous with the shooting; so the director and cinematographer can see right away how a shot looks, before it is disassembled or before the light changes. Editing software is becoming cheap to free and broadband and sharing sites have made editing collaboration from remote locations more available. DVD authoring has become reasonable on a home computer or through online sites.

Cost, Mobility, Ease

One of the most obvious and often discussed aspects of digital production has been the lowering of costs of production. Film cameras and editing technology have become widely available at low price points or in conjunction with other technologies like home computers and cell phones. Flip Video, Kodak, RCA, and Creative Vado have introduced pocket-sized high-definition (HD) video cameras that are priced under \$200. With some cameras, the user can download video directly, with a flip-out USB port, to any computer. The editing software for clips is in the device and is accessed when the camera is plugged into the computer. Hyper-portable video technology in the form of cell phones is making moving image capture more like still image capture in its availability and everyday aspect. In moviemaking magazines, one increasingly finds movies referred to as “no-budget.”

This practically cost-free moviemaking technology has created new communities around more mobile and flexible forms of moviemaking. There have been a few examples of full-length movies shot on cell phones and many short films.³ There are even film festivals created exclusively for movies shot on cell phones, like the Pocket Films Festival in Paris and the Dutch Mobile Film Festival. A variety of speed contests like Cinemasports and the 48-Hour Film Contest have sprung up which challenge teams of filmmakers to make a movie based on a series of requirements in 24 or 48 hours and which then “premiere” at the end of a weekend or online. Machinima is a way of making movies using video games.⁴ The software from the game provides camera angles, characters, and sets. Thus amateurs can create movies fairly easily without originating the software or virtual design. Camera angles require only a click and drag. The virtual and networked nature of videogames is such that players/filmmakers from around the world can easily collaborate on machinima projects. Similarly, movies can be made virtually in online worlds.

These are just a few examples that demonstrate the development of a variety of new processes, new communities, new formats, and even new ways of judging movies. The very concept of cinema is expanded as movies become many different types of objects experienced and produced in many new ways. People are increasingly making up their own rules, processes, and definitions as the limitations of the difficult and expensive film reel are eliminated. Although this has not yet affected what one might find at the local multiplex, these new communities and processes need not compete on the same plane as the traditional moviemakers because, as we will see, they have different distribution and exhibition outlets and can thus coexist with ease. The lowered cost and ease of production does open up new spaces for moviemaking and new communities of moviemakers and viewers often overlapping.

Post-production: Editing and Special Effects

One of the most integral aspects of the digital revolution in filmmaking is editing. Almost all movies are currently edited digitally. The role of the editor in production is changing in a number of ways. Editing used to be a very time consuming

and highly specialized skill. One could only edit after the film had been developed. Special effects were not part of the editing process, but were created in a laboratory. All this has changed. Basic editing software is available free on almost every personal computer and free editing programs are accessible online. Users can put together video clips and add sound tracks, titles, transitions, and special effects. They can also easily remix outside content with their own content. As Jim Kaskade, co-founder of free online editing site Eyespot, says, "Editing video is eventually going to be as simple as sending an email."⁵

Amateurs can now express themselves with the same technology as professionals. Oscar-winning editor Walter Murch, who edited *Apocalypse Now* (Francis Ford Coppola, 1979) and *The English Patient* (Anthony Minghella, 1996), was the first to use Final Cut Pro editing software on a personal computer for a major studio film, *Cold Mountain* (Minghella, 2003). He also used a high-definition version of the software for *Jarhead* (Sam Mendes, 2005). Murch says that for him the most exciting aspect was the opportunity to share information real-time from the editing rooms in San Francisco at Lucasfilm with the director on location in Northern Mexico.⁶ Editing can occur almost simultaneously with shooting so that the storytelling can be much more organic and seamless. As the roles of the specialists merge and become simultaneous, moviemaking becomes a more collaborative process. Production can be more fluid as it is less confined to tight and separate processes, titles, and hierarchies.

The most rapid changes are occurring in the area of special effects. What used to require a \$30,000 special effects workstation can now be done at consumer price level on a home computer.⁷ Color correction is available from prosumer editing software along with a number of other effects. Special effects software and plugins allow home editors to collage backgrounds and create effects like blizzards and fog. Digital effects have become so reasonably priced that they are being used for "everyday" effects in dramas, comedies, and independent films, not just for science fiction or disaster movies. Ed Ulbrich, an executive producer at computer graphics company Digital Domain, says "We're seeing a whole new crop of young filmmakers who are just as comfortable behind a workstation as they are behind a camera. Pretty soon there may not be any such thing as post-production. We're entering the era of filmmaking as desktop publishing."⁸

The whole system of moviemaking, the economies and division of jobs, is fundamentally changing in the low-budget range. Film can be manipulated in laboratories with treatments like acid washing and lightening effects, but, as film theorist Stephen Prince points out, for the most part, only the whole film could be treated. Under this system, the cinematographer was in charge of the treatment process along with the lab technicians, but that was the extent of his or her involvement in post-production. Now, a movie can be fine-tuned frame by frame in what is called the digital intermediary (DI). This allows filmmakers to change the color scheme of a background, put together scenery montages such as background from one shot with foreground from another, and add together virtual elements with live-action shots. This is practiced widely in movies without evident special effects like independent films and European dramas. Prince says that this "brings the medium closer to the kind of

fine-grain aesthetic control that painters have long enjoyed,” and yet the process does not interfere with “the appearance of naturalism.”⁹ Thus with the DI, which as the price decreases is becoming ubiquitous, cinematography becomes part of post-production. This creates new roles and new understandings as the cinematographer, whether shooting on film or digital, must understand the digital process so that the images captured are appropriate for the ensuing digital manipulation. The roles of cinematographer, director, editor, and special effects supervisor can become blurred as the separate production processes become merged in the digital process.

Production has been infiltrated at all levels by digital technologies to the point where there is almost no such thing as a non-digital movie.¹⁰ At some point in the process, almost every movie is converted into digital form and therefore has the potential to realize the affordances of the digital art object. Digital technologies expand the possibilities for filmmakers who at the extremes can make movies by themselves on a cell phone or completely collaboratively in the video game Halo and, more importantly, anywhere in between.

Some have worried that this influx of filmmakers will diminish the quality of cinema, but I believe that the combination of new modes of production along with new modes of distribution and exhibition creates more room for this excess and a larger more heterogeneous role for cinema in society.

Distribution

Distribution has long been the catching point for filmmakers. A film print can cost between \$2,000 and \$3,000 and be close to 2 miles long.¹¹ Because of the expense of producing prints and the infrastructure needed to make and deliver them, distribution remained almost exclusively the activity of the studios. Economies of scale with the expensive film print make distribution a possibility for only a small number of films. Digital technologies are breaking up this distribution oligopoly in a number of ways. As storage and transmission costs fall, the digital copy makes reproduction and delivery costs extremely low, thus distribution stops being a model of scarcity.

DVD distribution, digital downloads, and video on demand (VOD) have opened up new models of distribution, which together with new social networks and communities fostered by the growth of Internet culture allow for the distribution of movies with smaller, niche audiences. Downloading and streaming movies directly is currently becoming feasible with increasing bandwidth, storage capabilities, and the soon-to-be easy connection between computer and television. Here it becomes clear that one must discuss cinema as a new medium. Historically, much of film theory has focused on medium specificity, but with the concept of cinema as a new medium, one must consider not just the material form but the means by which this form travels, is distributed, and received. These now all depend on electronic networks and systems external to the copy.

The affordances of online communities and networks have enabled filmmakers to find their audiences in new ways, using Internet marketing and social networks and therefore opening up the legitimate possibility of self-distribution and smaller distribution outlets. Core audiences can collaborate with filmmakers and become a tool of distribution and marketing. These audiences need no longer be concentrated in cities with vibrant film cultures but can be connected virtually from anywhere. A movie can be distributed in different forms, prices, and times allowing a more flexible, adaptive, and individualized scheme. The lower costs of distribution, combined with lower production costs, can enable filmmakers to break even and make money from smaller audiences and ancillary products like speaking fees, merchandise, or access to specific audiences. New infrastructures enabled by the easily reproducible digital copy, such as piracy, open up new distribution processes, new markets, and new social networks. As a result, although in many ways, getting the attention of large audiences in a media-saturated world has never been harder and marketing costs have been consistently rising; the number of alternative distribution outlets and the new audiences reached can enable more filmmakers to find audiences and have their work seen.

Audience as Distributor

Social networking, enhanced search, rich media, and recommendation functions provide great opportunity for locating and satisfying niche audiences for a wide variety of movies. Increasingly, filmmakers, using these new digital social networking technologies, are taking distribution into their own hands by finding and building their own audiences, which would not necessarily have been reached by the studio distributor since they do not fit with the economics of the studio system either for size or for composition. These tools allow the filmmakers to keep in touch with their audience/subscribers/fanbase, sharing information and resources. By linking with already existing Web sites, blogs, and virtual communities, filmmakers can find interested audiences regardless of geography. Audiences participate in a number of ways, from online communities and commentary, to remixing the advertisements and designing trailers. This creates a new relationship between audiences and a movie by providing a sense of community and a sense of joint responsibility for its distribution.

Some of new independent online distributors, like FilmThreat and Greencine, began as and continue to be movie review and cinema culture Web sites, developing a cinephilic audience. Previously, many of the movies discussed and reviewed on these sites were screened only at festivals and so were not available to most of the sites' users. With digital distribution, an easy next step for these Web sites was to distribute the movies themselves to the audiences that they have fostered. Digital distribution appropriates the communities and social networks for cinema that have already developed online.

Movie as New Media

As a new media, movies can exist in many different forms. Increasingly filmmakers are taking advantage of this to offer different formats to different audiences at different times and for different prices. Filmmakers might post shorts and trailers to the Web site during production and post-production. They might premiere at a film festival selling DVDs or have an online premiere at the YouTube Screening Room or iTunes. They might sell a basic download from their Web site and a high-quality DVD with bonus material through a distributor. They might stop offering the download during a theatrical release or television showing or offer it for sale only where the movie is not showing. Sites like WithoutABox and IndieGoGo are enabling filmmakers to take advantage of these different opportunities and to create individualized distribution strategies.

Digital outlets have been creating vertical synergies between distribution and exhibition. For example, Martin Scorsese's World Cinema Foundation (WCF), which preserves older movies that have previously been neglected, has partnered with The Auteurs, a social networking site that streams movies, and B-side, which arranges movie screenings at universities and film clubs. They hope to align incentives and thus maximize the continuity of publicity and the success of each film.

Economic strategies can also vary. A filmmaker might allow a library, a museum, or a gallery to show his or her film, perhaps sharing ticket sales or the filmmaker might be paid a fee for being present at the showing or for a short talk. Web sites can sell T-shirts, sound tracks, or games based on the movie. Filmmakers can leverage their audiences to create new and innovative business models. For example, Susan Buice and Arin Crumley independently developed a large online audience for their film *Four Eyed Monsters* (2005) and the podcasts surrounding it. Although the movie and podcasts initially cost them more money than they made from theatrical, TV, DVD, rental, and digital downloads, the filmmakers made a deal with online culture site Spout.com. The deal provided that for every person who registered with Spout from the *Four Eyed Monsters* Web site, the filmmakers would get \$1. As cinema becomes a new media, the synergy between the communication and community networks of the Internet and the cinema product allows new strategies and distribution channels to flourish.

Piracy

With the advent of the digital art object and porous means of distribution, it becomes easier for audiences to access new cultural products both legally and illegally. Piracy has become a major distribution outlet for digital media. Where broadband is plentiful, illegal downloads have proliferated, while legal downloads have languished, entangled in rights issues. In areas where broadband is not readily available, DVDs are the primary form of pirate distribution. Although piracy is primarily initiated for the distribution of studio fare, it proceeds to open up new outlets for independent

movies, which might not have distribution otherwise. Pirate distributors, ignoring rights constraints, can fully exploit the digital affordances of reproducibility and mobility, developing new audiences and distribution infrastructures, which then influence the traditional, mainstream, legitimate systems.

The British soccer film *The Football Factory* (Nick Love, 2004) provides an example of this two-way flow. A rough-cut, pirate version of the film circulated well before the theatrical release, which was modest. But the controversy, both over the subject matter of fan violence and the piracy, pushed DVD sales way up, disproportionate to its theatrical success. As Xavier Marchand, of the DVD distribution company Momentum, states, "I thought it was going to hurt us, but I'm starting to wonder if it helped us because we could pitch our DVD as a special-edition director's cut."¹² The audience for *The Football Factory* was not necessarily the same as the general theatrical audience, thus the bootlegged DVD satisfied a disparate audience that a larger, legitimate distribution company would not have accessed. Nick Love, the writer and director, has been able to fund his next projects based on the popularity of *The Football Factory* and the ready audience, which the pirates discovered and bolstered. Thus, the pirate infrastructure worked as an effective marketing tool with considerably better aim than a studio could have, accessing communities outside the norm of studio marketing.

Piracy has been purposefully exploited by some filmmakers in order to subvert the traditional distribution channels and censorship. Syrian documentary director Omar Amiralay returned to Syria in 1992 after 12 years in exile in France. In 2005, he made a movie called *Flood*, in response and contradiction to a documentary he was hired by the government to make in 1970 about the Euphrates Dam Project. The film is extremely critical of the regime and would not have been released in Syria. So, Amiralay purposefully gave the movie to pirates to distribute. He says, "Two months later, everyone in Damascus had seen it. It was a digital flood."¹³ Piracy is a major part of distribution in the Middle East as cinemas are scarce, or in the case of Saudi Arabia banned, and censorship severe. In many countries, the legitimate distribution system favors Hollywood and Bollywood movies to the exclusion of the local, especially when there are often very few theaters per population. Thus, piracy enables people to see local movies sometimes for the first time.

At the same time, piracy allows the distribution of movies amongst communities who might be facing similar issues in disparate parts of the globe. Mexican director Sergio Arau made an English-language, Spanish- and Mexican-financed film called *A Day Without a Mexican* (2004), which purports to demonstrate what would happen to the economy of California if all the Mexicans suddenly vanished. The movie was a hit in Mexico and video pirates sent messages to Arau and his production company saying "that because the film was so wonderful for our people, they wouldn't make bootlegs until the film ended its theatrical run."¹⁴ After the theatrical run, though, the film became fair game with a number of Mexican and US versions. Arau says, "And I have a friend who bought one in Cambodia. I was very honored, because it was the only Mexican movie to be pirated in Cambodia."¹⁵ The global and immediate reach of pirate networks mocks the legitimate distribution system, which follows archaic perceptions of cultural preferences and bizarre timing schemes. New audiences are

cultivated and communities formed that can communicate with moving images on both local and global issues. A space is opened for a form of social communication outside the established hegemony.

Thanks to the lowered cost of production and distribution, the market strategies for many independent filmmakers can be aimed at smaller or previously undefined audiences and thus can operate under different paradigms than the studio system, which requires a major homerun to sustain the economics. Although the effects of the emergence of these filmmakers and audiences on the larger studio system are difficult to predict, they have already affected what people are watching, who is making movies, and the experience of cinema for many people.

Exhibition

The last cog in the cinema wheel has been exhibition. For many movies, the only time they take on a celluloid form is for the existing machinery of projection in the majority of theaters. Due to complications of existing distribution and exhibition deals and the current expense of high-quality digital projectors, theaters have been very slow to adopt digital projection. Digital projection can enable new economic models for theaters with a lowered cost of rental, providing them a larger number of exhibition options. The theater can cater more specifically to its community and time slots, thus changing the role of the theater in the community. At the same time, digital exhibition can leave the theater opening up potential of a wider exposure for a diversity of movies – art, independent, short, local, and even ideological.

International Adoption

A few countries like Ireland and Great Britain have government-sponsored programs to convert theaters to high-quality digital projection. In the developing world, many theaters are installing low-cost digital cinema, also known as “e-cinema” as opposed to the more expensive Digital Cinema Initiative (DCI) compliant “d-cinema” required by US studios. The lower quality e-cinema systems can cost as little as \$7,500, whereas the d-cinema systems cost close to \$100,000.¹⁶ E-cinema provides a great opportunity for local and independent movies as Hollywood studio movies require the DCI compliant technology and therefore cannot play legally on these digital projectors. In many countries, the high cost of a film print compared to the low cost of a movie ticket in the rural areas has meant that, previously, it has not been cost effective to strike prints for rural markets. Digital prints and projectors allow for a wider distribution outside urban centers.

In some countries, exhibitors and the companies that partner with them to outfit the theaters share profits from cheap-to-produce and targeted, digitally shot advertisements.¹⁷ Instead of the rental agreement based on box office, exhibitors and distributors can work out new relationships and income streams specifically directed

at the audience for a particular movie or in a particular theater. The improved targeting, which the flexibility of digital enables, can lead to innovative rental agreements and new income streams.

Alternative Programming

Smaller distribution labels are buying up the rights to re-releasing classic and independent films digitally. The problem for cinemas in showing classic movies has always been the difficulty in getting hold of film prints and the expense, but digital technologies enable the production of a “one-off” print with very little delivery cost. This changes the expense model as it enables theaters to keep the movie copy and show it whenever they like, sharing profits with the distributor using a different model than the traditional rentals.¹⁸ An independent film can be targeted to exhibition outlets specific to the subject matter.

Similarly, digital projection allows a theater to focus on local programming. Even the programming of home movie nights has become a popular theater event. This is a tremendous shattering of what the experience of cinema has been in most places. Although there have always been cineclubs small groups of people who gather to watch a film together often with discussion, it remained difficult and rare to see an independent or avant-garde film outside the major cities. Many writers have bemoaned the death of cinema as digital technologies took movies out of the community cinemas and into the private home, yet digital exhibition opens the possibility for local theaters to return to a place of prominence as the cultural hub of communities, providing local programming and events not available anywhere else and geared specifically to their audiences and time slots.¹⁹

Microcinema, Ideological Exhibition

One potential for this type of technology would be an increase in the numbers of independent venues and their stock. As Jason Silverman of *Wired* writes of the potential for a wireless delivery “microcinema network,” “You’ll just need a computer, a projector, some chairs and a white wall. Sign on, select from what could become a nearly infinite menu of titles, pay your fee and you’ll be in the movie business.”²⁰ Although there is potential for wireless and downloadable delivery in the future, the exciting reality worldwide right now is DVD and cheap digital projectors for “microcinema networks.” The mobility of digital movies has allowed exhibition in all sorts of formats for smaller and specified audiences.

In Asia there is a dearth of theaters, but small-scale “personal” video theaters have emerged. In Luang Prabang, Laos, I followed signs to a cinema only to find myself at a DVD rental store with individual small screening rooms. Similar, karaoke-style movie booths exist in other parts of Asia, even North Korea where they are called “video bang” or KTV joints.²¹ In China the government has plans for 35,000 mobile digital movie theaters for rural areas and similarly independent entrepreneurs in India have started traveling digital exhibitions.²²

In the United States, digital exhibition has opened up alternative exhibition networks, which have proven to be able to operate on a large scale. Much was made in 2004 of the success of Mel Gibson's *Passion of the Christ* and Michael Moore's political documentary *Fahrenheit 9/11*. Both exploited new grassroots networks and digital technologies for marketing and exhibition to great effect. A number of smaller political documentaries did well in 2004 as well. Some, like *Passion* and *Fahrenheit*, had theatrical releases, but others were distributed only online and on DVD by groups like MoveOn.org, who raised awareness through the Internet and encouraged local screenings in smaller venues and discussion groups, paralleling the religious distribution paradigm that has made great use of digital projection in churches as an alternative distribution system. Participating churches pay a fee based on congregation size and receive a DVD along with marketing materials like posters, handout cards, and Web resources to help promote the screenings locally.²³ Ideological movies have taken advantage of alternative, digital screening venues both in churches and home theater systems combined with electronic outreach to find their audiences to great effect.

Proliferating Festivals

New technology has enabled a DIY indie rock approach to exhibition with traveling shows reminiscent of *Cinema Paradiso* (Giuseppe Tornatore, 1988). Thus, much like in the case of distribution, filmmakers are finding their own audiences and bringing exhibition right to them. Again instead of the death of cinema, we see a revitalization of cinema culture as filmmakers and communities can develop direct relationships in new places through mobile exhibition technologies. Small film festivals have popped up on a number of rooftops and in parking lots around the country.

A number of film festivals have begun online. Competition movies are posted online and viewers can usually vote for their favorites and be part of the judging process. Some festivals enable filmmakers to sell their entries online. Some real-world festivals have screened their shorts online. Sundance has done this and also has had live streaming showings in the virtual world, Second Life. Second Life has its own film festivals as well. IFC Festival Direct brings festival movies directly to cable On Demand systems, even those that do not get traditional distribution. The excitement of the film festival is no longer exclusively for people who can afford the flight to and accommodation in Park City (home of the Sundance Film Festival) and have an inside source to tickets, but anyone with a broadband Internet connection can both appreciate the movies *and* be involved in supporting his or her favorite films. These festivals enable more people to experience new cinema. They cultivate cinephilia in places that were geographically, culturally, and economically off the beaten track for independent fare. Thus, there is a revitalization of cinema culture enabled by the mobility of digital exhibition. Sites like The Auteurs and UbuWeb premiere both new and classic movies online, curating themes like virtual art theaters. These sites have expanded the access of geographically dispersed cinema fans to independent, art, and avant-garde movies.

Conclusion

In covering so much ground, I hope to have given a taste of the myriad opportunities that are currently being exploited. At every level, digital technologies have created more collaborative environments in cinema production, distribution, and exhibition. In production we see a reduction in equipment costs for shooting, editing, and post-production and a reduction in the specialized knowledge needed to create a movie as increasingly software for high-quality production is developed for the consumer market. Movies can be created in a wide variety of forms and formats by global electronic collaborators or local cinema sports teams. Many of these technologies allow more interaction and flow between what were very separate divisions of moviemaking specialists and the simultaneity of action so that production even on the studio level becomes increasingly collaborative.

In distribution, online communities in conjunction with the digital characteristics of the DVD and downloadable movie have created new distribution pathways for more movies. In a situation of excess, filmmakers must find and at times create their own audiences. This collaboration requires more work on the part of both the filmmaker and the audience and it remains an open question if this work can be remunerated. Movies taking advantage of the characteristics of new media can satisfy different audiences in different forms at different times and for different price points. Piracy exploits the digital characteristics of movies and can find audiences previously left off the legitimate distribution map. Like the online networks, piracy accesses the communities that already exist but which have not been satisfied, matching new content with new audiences.

In the realm of exhibition, the inexpensive and readily available digital print can open up new economic models with distributors, which allow exhibitors to nurture new communities with diverse products. Instead of becoming peripheral, as has been predicted, the theater can, by accessing both local and specialized content, regain a place of prominence in the community. Movies can exhibit at smaller venues – churches, home theaters, and libraries – thus becoming available to geographically dispersed, but subject-targeted communities and encouraging grassroots activism. Festivals have demonstrated the excitement that people feel for specialized movies and increasingly these festivals can travel outside the established cinephilia communities. Digital movies are totally mobile and need not leave anyone out of the network.

With the elaboration of all these processes, this chapter demonstrates how the processes of cinema have changed at a number of levels and the potentials for new filmmakers, new communities, and new discursive spaces are opened up. As with all new media, the very flexibility and dispersion of the new cinema environment makes its existence less material and measurable and therefore perhaps less sustainable. It will remain to be seen if our options as audiences continue to expand and diversify. But we, as audiences, have had a taste of the potential for cinema to reenter our communities as it perhaps has not since it lost its prominence to television. As more people participate both as audiences and as filmmakers, and increasingly as both, the opportunities will continue to grow.

Notes

1. Geuens, J.-P. (2002) The Digital World Picture. *Film Quarterly*, 55(4), pp. 16–27.
2. Ibid.
3. One of the first full-length films shot on a cell phone was South African director Aryan Kaganof's *SMS Sugarman* (2007). www.smssugarman.com, accessed August 3, 2009.
4. www.machinima.com, accessed August 3, 2009.
5. Kirsner, S. (2006) Camera.Action.Edit. Now, Await Reviews. *The New York Times*, June 15, 2006.
6. Devereaux, M. (2005, November) The Final Cut Pro. *Wired*, 078.
7. Taub, E.A. (2003) Special (and Mundane) Effects of the Movies, on TV. *The New York Times*, May 12, 2003, C1, C10.
8. Argy, S. (2005) Digital Domain Animates Trent Reznor. *American Cinematographer* 86(10), pp. 78–79.
9. Prince, S. (2004) The Emergence of Filmic Artifacts: Cinema and Cinematography in the Digital Era. *Film Quarterly*, 57(3), pp. 24–33.
10. Paolo Cherchi Usai's 35-mm silent film *Passio* (2006) is a notable exception. He made only a few film copies and destroyed the negative. He writes, "In a strange way, that's my new term of engagement with the digital ideology, an oblique attempt to move beyond the notion of its 'dark age'." His attempts try to bring attention to the exhibition apparatus, thus *Passio* must play with a live orchestra. Cherchi Usai, P. (2006) The Demise of Digital (Print #1). *Film Quarterly*, 59(3), p. 3.
11. From producer Gretchen McGowan, Head of Production at Goldcrest Features in an email correspondence, June 21, 2009 – a release print is \$0.30 per foot and on average is 9,800 feet for a cost of \$2,850.
12. Dawtrey, A. (2004) Brits Get Soccer Kicks. *Variety Weekly*, November 29–December 5 2004.
13. Wright, L. (2006) Captured on Film: Can Dissident Filmmakers Effect Change in Syria? *The New Yorker*, May 16, 2006, pp. 60–69.
14. Payan, V. (2005) Once Upon a Time in Mexico: The Next Chapter in Cinema. *The Independent*, 28(6), pp. 44–47.
15. Ibid.
16. Cajueiro, M. (2007) Brazil Eager to Convert to Digital: Rain Network Leading the Charge. *Variety*.
17. Ibid.
18. Pendreigh, B. (2006) Park Circus Finds Niche in the Classic Movie Scene. In *Sunday Herald*. Generally, theaters rent movies from studios as a percentage of the box office, which varies over time. For example, in the first weekend, the studio receives the majority of the profit and as time goes on, the theater gets more of the percentage. This agreement is currently being renegotiated.
19. Most famous is Susan Sontag's piece *The Decay of Cinema*. Sontag, S. (1996) The Decay of Cinema. *The New York Times*, February 25, 1996.
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