

# The Impact of Digital Technology on Filmmaking Production Process

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## ABSTRACT

*Main objective of this article is to explain some of the issues surrounding digital filmmaking and to try to establish what impact the digital technology on filmmaking production process. This study explores the history of changing filmmaking technologies within cinema and explores the meaning of digital revolution. The study concludes upon ways in which cinema can re-establish itself in the digital age, and asks whether the current situation is really any different from the uncertainty of when cinema first began. This research has been conducted from a number of interviews, websites and textbooks in an attempt to offer a contemporary objective balanced overview of the subject. It must be noted that as the author of this work I have come from a primarily audio video production based background having completed a Postgraduate degree in electronic media at Kurukshetra University Kurukshetra in 2010. It has inspired my interest in the subject and may have some uninformed level of preference towards the audio video format not with standing all efforts to be impartial.*

**Key words:** *Digital Technology, Filmmaking, Pre-Production, Production, Post Production etc.*

## Introduction:

This article is to explain some of the issues surrounding digital filmmaking and to effort to establish what impact the digital technology on filmmaking production process. Finally the aim is to evaluate what impact digital filmmaking has had and will have upon cinema as a whole. The aim of this thesis is to examine the broader implications that digital technology has over previous technologies, and what these implications mean for filmmakers the film industry and audiences. Digital technology stores information electronically in discreet binary digits. The quality of the information is determined by many factors including the resolution and bit rate as well as the compression ratio that the specific technology uses. It's also important to note that digital filmmaking has difficulties that are far more significant than the camera. A digital editing technique has changed the process of linear editing into a non-linear process & editing clearly remains an important part of the filmmaking process. All the aspects of digitalization will be explored throughout the production process, as opposed to just the camera.

## Digital Technology:

Digital information is recorded in binary code of combinations of the digits 0 and 1 also called bits, which signify words and images. Digital technology authorizes huge amounts of knowledge to be compressed on small storage devices that can be easily well looked after and transported. Digitization also hastens data broadcast speeds. Digital technology has one-sided how publics communicate, learn, and work. Broadcastings have important on digital methods to convey messages. Digital technology replaced analog signals for many telecommunication forms particularly cellular telephone and cable systems. Analog-to-digital converters developed beat code modulation to change analog data into digital signals. Associated to analog transmissions digital signals were less unrecognizable and could easily be repeated. Digital printing with electro photographic and organized data technologies has altered how books and magazines are published. Patent issues regarding digital technology have addressed the copying of music and videos without entertainers receiving credits.

**Filmmaking Production Process:****1. Pre-production**

Idea is the first element in the preproduction process. Pre-production is the phase of further developing ideas and planning prior to the process of production. Just For example a small video company, pre-production may refer to everything that happens before shooting begins, for example, meeting with the client, research, storyboarding, location planning, etc. For feature films, pre-production is more specific and only begins when other milestones have been met such as financing, screenplay, casting and major staffing. In this case pre-production includes:

**1.1 Concepts and Vision:**

When you are write your script it is a good idea to organize your thoughts on paper. This does not need to be a complete breakdown; it can be stream of consciousness type writing. By writing down what you are attempting to shoot you can get a good idea of what your concept or vision for the film will be. Your vision need not only be your dialogue but should include the pace, setting, editing style, color palate and themes of your piece.

**1.2 Script Writing:**

When you are making a documentary, shooting a live event or planning on having your actors improvise, writing out a script will help you in production and postproduction.

**1.3 Shooting Script:**

Shooting script to start thinking about how you are actually going to shoot and edit this project. The Shooting Script is the draft script with more technical details including the type of editing transitions, camera angles, and nods to color palates costumes as well as more stage direction and precise locations.

**1.4 Script Breakdown:**

The Script Breakdown is a series of lists. In them, you break down the script to its bear elements and make detailed lists. These lists should include: props, character dialogue, locations, camera set-ups notes on audio, costumes, equipment needs etc.

**1.5 Storyboard Script:**

Storyboard is a great way to pre-visualize your camera set-ups and framing. It also provides a more detailed vision to your crew and actors..

**1.6 Shooting Schedule:**

Shooting schedule is a detailed breakdown of when cast and crew should arrive on the set and when and what scenes will be shot. Everyone associated with the shoot should get this schedule. You do not need to shoot in order of the script. You have all these availability lists (crew, cast, locations, equipment) so you can make the most of your time.

**2. Production:**

In film and videoproduction refers to the part of the process in which footage is recorded. This is what most people imagine when they think of a film being made actors on sets, cameras rolling etc. The production phase is also known as principal photography. In large feature films the beginning of the production phase marks the "point of no return" the point at which it is no longer financially viable to cancel the project. At

this point it is almost always cheaper to continue until the project is finished than to deal with the financial fall-out of canceling. The goal of principal photography is obviously to record all required shots, however it is fairly common to shoot "pick-up" shots in post-production. Pick-up shots may be required when a mistake is noticed a script change is made or even if a performance is deemed to be unsatisfactory. In music production usually refers to the creative direction of a project. Unlike a film producer who is more of a manager, a music producer has a very hands-on role in the creative development. You are finally ready to shoot. The day has arrived and you are, of course, an hour early to the set. In the following pages we will cover a lot of material. How to run a set Interview techniques 5 tips to directing actors and then some more technical aspects of shooting: Issues to consider when you are shooting, The basic elements of cinematography and 3-point lighting:

### **Before Shooting Checkout Equipment:**

- ❖ **White Balance** -Outdoors sunlight and Fluorescent light have a high temperature causing objects to appear bluish. Indoors candlelight and incandescent light have a low color temperature causing objects to appear reddish. Bring a white card or paper to use for white balancing. White balance compensates for the difference in color temperature to give a natural result on videotape. Most consumer video cameras have auto-white balance.
- ❖ **Focus** -Always use manual focus - Focus by zooming all the way in, focusing and then zooming out
- ❖ **Iris/Shutter Speed** -Iris settings are usually set on automatic. A higher shutter speed will prevent fast-moving objects from looking blurred, however the higher the shutter speed the less light allowed into the camera.
- ❖ **Audio** -Always use an external microphone to reduce camera noise and gain more control over the acoustic environment. Always use headphones during a shoot to confirm audio quality. The noisier the environment the closer the microphone has to be to the subject to separate the background sound. Always record a 2 to 5 minutes of just ambient noise or room tone before or after a shoot. Ambience can be used to mask breaks in continuity during editing. They can be very effective in editing but can also create a distracting interruption in your scene if you are not organized. Audio is often the difference between amateur and professional video production.

### **The Basic Elements Of Cinematography:**

#### **Shot Types:**

There is a convention in the video, film and television industries, which assigns names and guidelines to common types of shots, framing and picture composition. The list below briefly describes the most common shot types.

**3.1 Extreme Wide Shot:**The view is so far from the subject that its not even visible. This is often used as an establishing shot.

**3.2 Very Wide Shot:**The subject is visible, but the emphasis is still on his placing in the environment. This often works as an establishing shot in which the audience is shown the whole setting so they can orientate themselves.

**3.3 Wide Shot:**The subject takes up the full frame or at least as much as possible. This is the same as a long shot. The small amount of room above and below the subject can be thought of as safety room - you don't want to be cutting the top of the head off. It would also look uncomfortable if her feet and head were exactly at the top and bottom of frame.

**3.4 Mid Shot:**Shows some part of the subject in more detail whilst still giving an impression of the whole subject. The MS is appropriate when the subject is speaking without too much emotion or intense concentration. It also works well when the intent is to deliver information, which is why television news

presenters frequently use it.

**3.5 Medium Close Up:**Half way between a Mid shot and a Close up. This shot shows the face more clearly, without getting uncomfortably close.

**3.6 Close Up:**A certain feature or part of the subject takes up the whole frame.

**3.7 Extreme Close Up:**The ECU gets right in and shows extreme detail. You would normally need a specific reason to get this close. It is too close to show general reactions or emotion except in very dramatic scenes.

**3.8 Cutaway:**A shot of something other than the current action. The cutaway is used as a "buffer" between shots or to add interest/information.

**3.9 Cut-In:**Cut in Like a **cutaway**, but specifically refers to showing some part of the subject in detail. It can be used purely as an edit point or to emphasize emotion etc.

**3.10 Two-Shot:**A comfortable shot of two people framed similarly to a mid shot. Two-shots are good for establishing a relationship between subjects. If you see two sports presenters standing side by side facing the camera you get the idea that these people are going to be the show's co-hosts. As they have equal prominence in the frame, the implication is that they will provide equal input.

**3.11 Over-the-Shoulder Shot:**Looking from behind a person at the subject, cutting off the frame just behind the ear. The person facing the subject should occupy about 1/3 of the frame. This shot helps to establish the positions of each person, and get the feel of looking at one person from the other's point of view.

**3.12 Noddy Shot:**Common in interviews this is a shot of the person listening and reacting to the subject. In fact when shooting interviews with one camera the usual routine is to shoot the subject for the entire interview and then shoot some noddies of the interviewer once the interview is finished. The nod dies are edited into the interview later.

**3.13 Point-of-View Shot:**Shows a view from the subject's perspective. There are 2 types of POV shots: those, which actually mimic subject's eyes and those, which are regular camera shots from the angle of their perspective.

**3.14 High angle.** The camera is placed above eye level, looking downward. A high angle shot can make a character look smaller younger, weak, confused, or more childlike.

**3.15 Eye level.** Most commonly used in general shots.

**3.16 Low angle.** The camera is placed below eye level looking upward. A low angle shot can make a character look bigger, stronger, or nobler. It also gives the impression of height.

**3.17 180 degree rule:**If we are using multiple cameras and plan to edit the different shots in a scene into a seamless sequence, an important rule to keep in mind is to place all the cameras on the same side of a line of action. **A line of action** is a path, which your subject is traveling along, or an imaginary line between two characters that are interacting. This rule is called 180-degree rule.

### Camera moves

There's a tendency among camera operators, especially beginners, to be continually moving the camera zooming in and zooming out, pan left to right or pan right to Left and Tilt up or Tilt down etc. A camera move should have a purpose. It should in some way contribute to the viewers understanding of what they are seeing.

**3.18Pan.** The camera moves from side to side so that it aims more to the left or right. This is a way to reveal new information. An effective way to lead your viewer through a long pan is to follow a smaller object (a person walking, a car) as it passes by your subject, leading the move.

**3.19Tilt.** The camera moves to aim up to down or down to up without changing the location.

**3.20 Zoom-In.** In general, a Zoom-In directs our attention to whatever it is we're zooming in on. So if you zoom in, to zoom in on something interesting or important.

**Zoom- Out.** A zoom-out usually reveals new information. Often it tells us where we are.

**3.21Dolly.** The camera's actual position changes such as to move alongside a moving subject or to travel closer to a character during a scene.

**Dolly in** moves the camera closer to the subject.

**Dolly out** backs the camera away from the subject. Dolly in and dolly out are sometime called "**track**".

### **Composition Rules:**

The followings are useful guidelines you can use when composing a shot.

**Rule of thirds:** Rule of thirds divides the frame into thirds both horizontally and vertically. The points where the vertical and horizontal lines cross are aesthetically pleasing spots to place subjects or to have perspective lines converge. It is usually best to avoid placing horizon lines exactly in the middle of a frame, but to place the horizon either above or below center approximately one-third or two thirds up the height of the frame.

### **Three Point Lighting Techniques:**

The Three Point Lighting Technique is a standard method used in visual media such as video, film, still photography and computer-generated imagery. It is a simple but versatile system that forms the basis of most lighting. Once you understand three point lighting you are well on the way to understanding all lighting. The technique uses three lights called the **key light**, **fill light** and **back light**.

**4.1Key Light:**Key light is the main light. It is usually the strongest and has the most influence on the look of the scene. It is placed to one side of the camera/subject so that this side is well lit and the other side has some shadow.

**4.2 Fill Light:**Fill light is the secondary light and is placed on the opposite side of the key light. It is used to fill the shadows created by the key. The fill will usually be softer and less bright than the key. To achieve this, you could move the light further away or use some spun. You might also want to set the fill light to more of a flood than the key.

**4.3 Back Light:**The backlight is placed behind the subject and lights it from the rear. Rather than providing direct lighting (like the key and fill), its purpose is to provide definition and subtle highlights around the subject's outlines. This helps separate the subject from the background and provide a three-dimensional look.

### **Sources of Lighting:**

Whether you are working with artificial lights or sunlight the physics of light is the same. Hard light from either source will give you hard-edged shadows and pinpoint highlights on reflective surfaces. Soft light (bounced or diffused) will give you more flattering 'wrap around' light and more gradual transitions into shadow. Flat or no directional light will minimize shadow thereby limiting a sense of three- dimensionality

in your scene.

### **3. Post – production**

Post-production is the third and final major phase of the production process. It is often referred to simply as post. "We can sort that out in post". There are many things that can happen in post-production. Whereas digital cameras are perhaps emulating their celluloid counterparts digital non-linear editing offered a completely new concept to the way images could be cut together in much the same way that text can be cut and pasted in electronic word processors. It was perhaps for this reason that post-production was one of the first areas of the film industry to really embrace digital technology in the form of computerized non-linear editing. Definitely the decision to develop this technology was perhaps partially motivated by the economic in that it was not exactly cost effective to edit traditionally. But there were other advantages that could be exploited with non-linear technology. Most obviously it has impacted on the creative control it gives filmmakers in that various sequences can be cut and re-cut effortlessly with non-destructive editing packages and no film stock is being damaged whilst the edit is taking place. Indeed, as the name suggests, non-linear editing brought about a way of constructing edits in a non-sequential fashion. Interestingly, whilst we may think of a narrative as linear the introduction of a timeline meant that sections could be skipped and returned to later. But digital technology within post has not stopped with non-linear editing. Perhaps one of the largest continuous impacts that digital technology has had within cinema within the last fifteen years has been Computer Generated Image effects and animation. In Corliss recent article about digital technology. Steven Spielberg is quoted as saying that the advantage of Computer Generated Image is that directors can now follow what their imagination tells them. As Corliss shrewdly points out, these Computer Generated Image effects sell tickets at the box office. Perhaps this technological development would belong under all three of Bordwell and Staiger's reasons for change Computer Generated Image novelty is successful at the box office and it is aesthetically empowering to the director. However, novelty is short lived, and the demand to constantly improve the effects means that Computer Generated Image prices drop approximately 90% every five years. Which illustrates the rapidly moving growth in the technology of post-production. Once again the focus of this post-production analysis has so far has been upon major Bollywood/Hollywood productions, but the one result of these constantly improving, affordable editing packages is that low-budget filmmakers can now edit themselves without the cost of an expensive post-house

### **Digital Distribution**

It is difficult to divide up the roles of digital distribution and digital exhibition, as the two elements are perhaps so closely intertwined on some issues – such as security. But for the sake of this study, it shall be considered that the distribution shall focus upon the elements of bringing the picture to the screen, whereas the digital exhibition will focus upon the aesthetic implications of digital projection. There may, however, be some overlap between the two sections, which is sadly an unavoidable consequence of one element in a chain affecting the next. It is fair to say that it is these two areas that are the most contentious within the current digital debate.

### **Conclusion:**

We acknowledge that cinema has undergone various technological changes over the past century, why are we now associating any further development with some kind of loss. Is it not just another change? Perhaps it is this factor that is the greatest impact that digital will have upon the filmmaking production process. As explored throughout this study, the consumption of film is by no means diminishing, and if anything, it is increasing. Digital has enabled audiences the ability to find whatever films they want, enabled the audience the chance to skip, pause, scrutinize images and sequences in ways that not been available before. Digital has enabled audiences to explore their own creativity more easily and affordably, using film as a medium upon which to communicate and express their observations. Digital has permitted choice, a proliferation of markets that can now be catered for, an increase in production and an increase in consumption. This in turn leads studios to find ways to increase production efficiency, and the solution appears to be a production process that resides entirely within the digital domain. Whilst perpetual uncertainty will always continue in a changing world, it would be fair to say that digital has arrived and will not be going away in the near

future.

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