

ESSENTIAL VIDEO COMMUNICATION TECHNIQUES

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ABSTRACT: Video communication is the most powerful tool used in online communication and doing it in a proper way is essential. The broadcast and cinematographic technology are at the end-user disposal with the latest devices available for any consumer. This paper will present the key techniques in making a professional video production even with domestic equipment. With professional equipment the production can be presented in any television broadcast or film festivals.

KEYWORDS: video communication, techniques, script, production, equipment, shooting, video camera, tracking shots, close-up, smartphone, multimedia

1. INTRODUCTION

In any video production there are few steps to follow in order to achieve the best results: a good IDEA, write a SCRIPT, find the production team, choose the best equipment and make a good post-production editing.

There are very important essential camera tips for the production like lighting, stabilisation, white balance, rule of thirds and other shooting rules. Even though there are many possibilities for the final video product there are several key formats that should be respected in order to have the material at cinematographic, television or online standards.

There are many materials presented on this subject but this paper strives to bring students or amateurs to the level of professional producers in video or multimedia materials of nowadays possibilities.

2. THE LATEST TECHNOLOGY

Sony, the leader in the video marketing, came at the Mobile World Congress trade show in Barcelona (MWC 2017) with two science fiction launches: Xperia XZ Premium smartphone and Xperia Touch multimedia video projector [Kel17].

One extraordinary feature of Xperia XZ Premium is capturing video at up to 960 frames per second (fps) being capable of filming slow-motion footage at more than four times the rate possible on Apple and Samsung's top-end models, the leaders in smartphones technology. The achievement was made possible by the new “motion eye” technology that has a new type of image sensor that has a built-in

memory of its own.



Fig. 1. Sony new motion eye technology

Even though the sensor is capable of 1000 fps in 1080p full high definition, this smartphone was reduced to 960fps at a resolution of 720p (1280x720 pixels) being able to capture just 0.18 seconds of footage, which produces six seconds of video played back.

The Sony Xperia Touch projector, an Android-powered device, uses ultrashort-throw projection technology. Built-in sensors let any kind of surface used to act like a large touchscreen on a 720p image configured at a size between 58.4cm to 203.2cm.



Fig. 2. Sony Xperia Touch projector

This kind of experiences have been presented in science fiction films and as invention but haven't been produced for regular consumers before.

3. PRE-PRODUCTION

There are 3 phases of video communication production:

pre-production, production or camera shooting and post-production.

A very good idea is the key factor in the video production process. This idea has to be very well documented, covering the latest trends with a large range of interest for the targeted public.

The script transforms the idea in a cinematographic style according with the production resources. Having a storyboard makes the production work easier for the actors and the camera operators.

4. CAMERA SHOTING MAIN RULES

In the production proces the camera shooting rules are very important, but most of the footages on internet don't respect these rules. Despite the possibilities of new technologies, many specialists don't take in consideration any lessons on filmmaking. In the section bellow there will be presented the most important shooting video framing that are based on the "rule of thirds" [Smi97] guideline that applies in any process of composing visual images.

4.1. Wide/Long shot

The wide or long shot is the largest frame that should introduce the audience in the scene of the event. This general shot is used also during the production editing as an intermediate shot in betwin other sequences. There can be one or more people in the frame but the souroundings are in the main focus.

4.2. Full shot

This shot has a person or a group of people in front of the camera that has the whole body in the image. There should be just a little space above the head and bellow the feet of the person in the shot.



Fig. 3. Full shot

The wide shot can be used on an entire object or human body, it places the action in relation with the surroundings.

4.3. American shot

"American shot" is also known as medium-long, $\frac{3}{4}$ or "knee" shot and represents a translation from French fim criticism "plan americain" that was used a lot in westerns American movies in the 30s and 40s [UTD15]. This shot is wide enough to show the setting around the person but still be able to see the face of the person and it cuts off the legs above or below the knees.



Fig. 4. American shot

This image composition allows complex dialogue scenes to be played with one or more human bodies in it without changing the camera position.

4.4. Medium shot

In this shot the person is shown with only the upper-body, arms and head. It is an expressive shot of body language especially when the person uses hands in the communication. It is use a lot in public speaking.



Fig. 5. Medium shot

4.5. Over the shoulder shot

Over the shoulder shot is a close-up shot of a person that usualy is in communication with another person

that is with the back to the camera. The first person is in the main focus and the other is showing only top part of the shoulder and part of his hair, being out of focus.

It is used in dialogues or interview and can be taken with 2 or 3 cameras and then the shots are called “reverse angle shots”.

4.6. Close-up/Gross Plan shot



Fig. 6. Close-up shot

In this shot top of the head or hair can be cut off. The main communication elements are the mouth and the eyes. Bottom frame edge of the shot should be just above shoulders.

4.7. Other shots

There are many variation of the previous shots like extreme close-up shot or extreme long shot that reflects the details of a object or the depth of the visual composition.

5. POST-PRODUCTION

For the live video streaming settings, bitrates and resolutions there are many formats but the most used and accepted are in the Table 1. The most popular are 4K, 1080p, 720p, 576i/p, 480p, 360p and 240p according with Youtube Guidelines [YOU16].

Table 1. Table of video formats

Video Format [i=interlaced] [p=progressive]	Resolution [pixels]	Video bitrate [kbps]	Audio bitrate [kbps]	Frames per second [fps]	Encoder	Profile/Level	Keyframe rate [sec.]
4320p (8K UHD TV)	7680x4320px	10.000 – 50.000 kbps	128-256 kbps	@ 60, 30 fps	H.265 (HEVC)	High	1-2 seconds
2160p (4K UHD TV)	3840x2160px	8.000 – 40.000 kbps	128-256 kbps	@ 60, 30 fps	H.265	High	1-2 seconds
1440p	2560x1440px	6.000 – 18.000 kbps	128-256 kbps	@ 60, 30 fps	H.265	High	1-2 seconds
1080i/p	1920x1080px	2.500 – 9.000 kbps	128-256 kbps	@ 60, 30 fps	H.265, H.264	High, Main	1-2 seconds
720i/p	1280x720px	1.500 – 6.000 kbps	98-128 kbps	@ 30, 25 fps	H.265, H.264	High, Main	1-2 seconds
576i/p	720x576px	800 – 2.500 kbps	98-128 kbps	@ 30, 25 fps	H.265, H.264	Main, Baseline	1-2 seconds
480i/p	854x480px	500 - 2.000 kbps	64-98 kbps	@ 30, 25 fps	H.265, H.264	Main, Baseline	1-2 seconds
360i/p	640x360px	400 – 1000 kbps	64-98 kbps	@ 30, 25 fps	H.264	Main, Baseline	1-2 seconds
240i/p	426x240px	300 - 700 kbps	32-98 kbps	@ 30, 25, 12fps	H.264	Baseline	1-2 seconds
160i/p	176x144px	28 - 200 kbs	32-98 kbps	-	H.263	Baseline	1-2 seconds

6. CONCLUSIONS

There are many theories in this topic but the most important elements are usually ignored for experimental and creative reasons. Aided by the newest technologies, anyone can create visually stunning films at professional levels if they respect the rules and guide lines made the industry leaders.

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