

Design of Digital Squeeze Frame Console for Public Service Advertisement

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ABSTRACT

Digital advertisement is one of the promotional media used by producer to embed brands in the memory of their consumers. However, in the current era, digital advertising is not only used to promote a brand, but in delivering public service advertisements, digital advertising is often used. This is because with the development of the digital era, digital advertising is accepted by the public more quickly. There are various types of digital advertising, including Squeeze Frame. The process of running Squeeze Frame using the Vmix software. Vmix software is a virtual mixer that runs using a keyboard and mouse. In a broadcasting process, especially in outdoor areas, long distances in the process of controlling audio video broadcasting become one of the obstacles. So, there are limitations in running the Vmix software which can only be run using the keyboard and mouse. In this research, an alternative tool is created that can be used when running Vmix software in console form. The form of console hardware is easy to carry so that the broadcasting process using Vmix software can be carried out more easily. By using Arduino Uno CH340 as a microcontroller, the console not only adjusts the audio video input but also adjusts the squeeze frame display. The result of this research is that the hardware console runs well, for the squeeze frame merging button for public service advertisements. Respondents are interested in this console with a percentage of 95.8%

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1. INTRODUCTION

Development of digital advertisement is increasing along with the development of multimedia technology[1]. Digital Advertisement is closely related to Brand Placements. Brand Placement itself is a promotional technique advertising to place or embed a brand or products in films or television programs without being referred to formal (passive)[2].

Brand placement can be defined as a payment for inclusion in the brand of a product or service the identity of a brand, consisting of audio and or visual, in a media program mass[3]. The purpose of this technique is to persuade potential consumers by 'familiarizing' a brand in their memory. Main idea of this technique is that people will not change the channel when encountering an advertisement inserted in a commercial film. Because of this effectiveness, on this day digital creative advertisement is also used for public service advertisement. There are several types of digital creative advertisement among work ups, squeeze frame, digital frames, running text, superimpose logo, backdrop, adlips and video tape. In running various types of digital creative advertisement on a video then do a video mixing.

In the process of mixing video, you can use the virtual mixer such as Vmix software. However, because VMix is a virtual video mixer that runs with using a mouse and keyboard, there are some limitations when run the software. As an alternative to running software VMix, a console, a physical tool that can control every feature in the software without having to click with the mouse or button keyboard shortcuts[4].

Console tool are usually used in medical in the form of a robotic console as a tool when performing surgery[5]. In Audio, mixing console is a hardware that is used for both recording and mixing audio in a studio. There are three main functionalities of mixing console i.e summing, main process on mixing console is to combining the audio signals, processing is audio process in equalizer, routing is an audio process for effect and grouping.

Virtual Mixing console is made for audio in music show[4]. The Arduino Uno-based console is built and integrated with Vmix software. But in this console only use for Audio. Audio Video Vmix console can also be used for streaming on youtube. Vmix software is connected with live streaming on youtube so the console can control the video that is being broadcast on youtube streaming. The weakness of this console is only can play video.

In this paper we propose the design of digital squeeze frame console for public service advertisement. Console for digital advertisement was created as an alternative tool that can be used when running software Vmix. This tool can control every feature for mixing and switching videos as well as advertising media in the VMix software include Squeeze Frame so that users can control VMix more easily and efficiently and be able to broadcast it remotely to meet broadcasting needs during the pandemic.

2. RESEARCH METHOD

2.1 Digital Advertisement

Advertising can be meaningful as a tool to form brand awareness, brand preference, brand equity and even brand loyalty and increase sales of a product. O'Guinn defines it as: "Advertising is a paid, mass mediated attempt to persuade"[6]. So according to O'Guinn advertising is a form of communication that must contain at least 3 basic components, namely the form of communication must be paid, must be conveyed to the audience through

the mass media and this form of communication must be an effort to persuade (must be trying persuasion)[7]. Along with the development of technology, the media for advertising also growing. In order for advertising to achieve an audience response as intended wants, advertising must be done creatively. Creative advertising can be realized through the creative process of advertising. Belch & Belch [8] stated that advertising creativity is the ability to generate fresh, unique, and appropriate ideas that can be used as solutions to communications problems. To make the right idea effective, and creative, it must be relevant to the target audience. In addition, you must also pay attention to the structure of the ad and it is important to determine the objective (response) of advertising based on communication model that explains the impact of communication on response someone.

2. 2. Squeeze Frame

One form of creative advertising is squeeze frames[9]. Squeeze frames is a term used in the broadcast world that is intended when reduce the image size without changing the aspect ratio of the image so it will create an empty spot in the form of an angle (L), and a space[10]. This blank is used to put information and promotions can be in the form of images or moving animations. With an angled shape, then the coverage area is wide enough, so that information and promotions can be conveyed complete. This type of display time ranges from 5 to 8 seconds.

2.3. Public Service Advertisements

Public service advertisements are advertisements that are used to convey persuasive information or educate social audiences so that the public as audiences can increase their knowledge, increase their awareness and attitudes, and change their behavior in order to have a positive outlook and a better life[5]. In creating public service advertisements, a creative breakthrough is needed in dealing with the barriers of advertiser conceptors, so a mental attitude in creating advertising designs is needed[8]. The presence of public service advertisements is adjusted to the character of the audience by paying attention to demographic, geographical, psychographic, and behavioristic aspects, resulting in above the line , below the line , through the line media groups, including ambient media[11]. The public service advertisements media have characters and delivery techniques in accordance with the themes of prohibitions and innuendos, warnings, appeals or suggestions, and scientific themes that are tailored to the message and audience[6].

2.4. Vmix Software

VMix is a video mixer and switcher software that utilizes recent advances in computer hardware to provide video live HD mixing, a task previously only possible done with

expensive dedicated mixer hardware. The VMix software has dashboard display like other livestream software dashboard displays. The features that vMix has are very capable to be used when perform live streaming with very good quality. This software can accept input from webcam video cameras to video cameras with high quality 4K, NDI, video files (AVI, MP4, H264, MPEG-2, WMV, MOV and MXF), DVDs, audio files (MP3 and WAV), SoundCards, web browsers, RTSP, Powerpoint, photos, solid color and many others [12].

Specifications on a laptop or computer are an important factor for run the VMix software so that it can be used optimally. Better the specifications of the laptop or computer used can improve convenience for the user when using it. Minimum specifications that needed to run the vMix software include Operating System: Windows 7 or Higher, Processor: 2GHz Dual-Core Processor, Memory: 2GB DDR3, Hard Drive: 7200 RPM Hard Drive (for recordings), Graphics Card: DirectX 10.1 Compatible Screen Resolution: 1280x720. The speed of the software is very dependent on the graphics card used. The more inputs and the better the quality of the output produced, then should the faster the graphics card used.

2.5. Arduino Uno CH340

Arduino is an open source electronic platform that is easy to use its use (easy to use) both hardware and software [13]. In other words, Arduino is a basic system consisting of hardware and software which prioritizes its use. The core of Arduino is the microcontroller of various types. Arduino Uno is one type of Arduino which has a series of rectifier and chip CH-340 as a serial to USB converter.

2.6. USE Questionnaire

The use of USE Questionnaire is a form of questionnaire to assist measurement usability of products and services subjectively, where the question consists of 4 dimensions regarding usability, ease of use, ease of learn and satisfaction [14].

3. RESULTS AND DISCUSSION

3.1. Console System Design

In this section we will explain system design of the creative advertisement console. As for the chart of the process research are as follows:

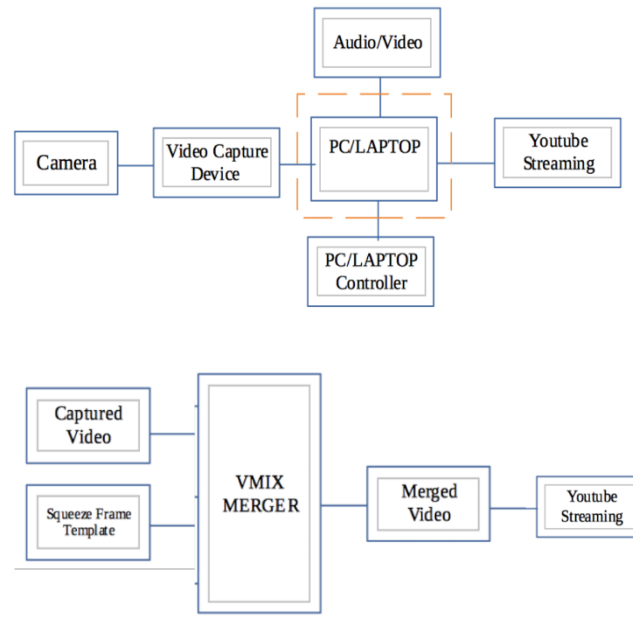


Figure 1. System design of digital advertisement console

The console include Arduino Uno CH340, 4 preview buttons, 4 active buttons, 3 transition buttons, 4 sliders, a fader master volume, a T-Bar and breadboard. The tools needed are computer or laptop, solder and tin. The VMix console will function as a controller that which will control the function keys in the VMix. Console VMix software will be connected to a laptop or computer with a USB cable. When designing a product, it is necessary to pay attention to such as size and shape which makes it easier for the user to use. The product will be made like a block that is has several buttons and sliders that have their own functions.

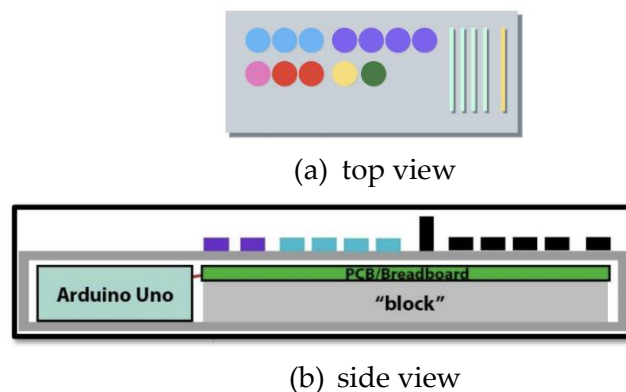


Figure 2. Design product of digital advertisement console

Inside of the VMix Console, there is an array of Arduino Uno and Breadboard which is used to connect the cable from Arduino Uno to the existing breadboard is installed with a button. The product assembly stage is the core stage in the tool-making process. The first step that must be done is to install some software necessary tools such as VMix, Hairless MIDI to Serial Bridge, loopMIDI, and XLloader. Then the next step is to connect the Arduino Uno CH340, knobs, slider and fader. After the software and hardware are ready, then the next process is manage serial communication between hardware and software so that they can be connected.

3.2. Squeeze Frame of Public Service Advertisements

Squeeze Frames are advertisements that appear while a TV program is still going on and the condition of the TV screen of the TV program is proportionally smaller then advertisements appeared around him. The size itself depends on the standards set each TV station. Likewise with the shape, some are in the form of the letter L some are rectangular. Making a squeeze frame template is done on Adobe After Effects software. The squeeze frame template is a video with an .mp4 extension.

The information on Squeeze Frame is contain advanced to the community to conduct the Covid 19 vaccination.



Figure 3. Squeeze Frame of Public Service Advertisement to Conduct The Covid 19 Vaccination

3.3. Hardware Test

The hardware console test is intended to analyze the performance of the hardware that has been made whether it is as expected, the following are the results of hardware performance analysis that uses the USE Questionnaire[15]. Figure 4 show the process of Vmix Console for digital advertisement. On this test use kuantitatif metode to get the result. The hardware will be tested with several respondents on how well the console performance is presented to the user. Respondents are students majoring in broadcasting,

age 20 – 25 years old. Table 1 shows the results on the USE Questionnaire that the console runs well and is user friendly for all users. We conduct the USE Questionnaire three times a week to test the reliability of this console.



Figure 4. The process of Vmix Console

Table 1. Result of USE questionnaire

No	Aspect	Average Value 1 (%)	Average Value 2 (%)	Average Value 3 (%)
1	Usefulness	96	95.5	97
2	Ease of Use	93.5	95	95.5
3	Ease of Learning	94	94	95
4	Satisfaction	94.5	95	96
Overall Average		94.5	94.8	95.8

On the first performance test, for the usefulness aspect, an average value of 96 % is obtained. On the second performance test is 95.5 % and third performance test is 97 %. Ease of Use aspect get the highest value on the third performance test with 95.5 %. The highest value is also get on the third performance for Ease of Learning aspect with the value 95 %. Satisfaction aspect get 94.5 % on the first performance test, 95 % on second performance test and 96 % on third performance test. With four aspect and three time performance test, then the highest average result obtained 95.8 %. According to table 1 the result of VMix console is very good it is mean that this console is very appropriate to use.

3.4. VMix Software Test

Testing on live streams in VMIX software went smoothly. To display a squeeze frame video, press the merger button. This will display the video squeeze frame into the main video that is currently playing. The Squeeze frame video will be visible at the bottom and sides of the main video. The duration of the squeeze frame video is 15 seconds. The squeeze frame video will close automatically after 15 seconds. The results of the merger button experiment are shown in table 2.

Table 2: Squeeze Frame Experiment

No	Button	Task Description	Status
1	Merger	Display the video squeeze frame into the main video that is currently playing	Succeed

On the squeeze frame, we show a video of public service advertisements related to covid vaccination so that it can increase public awareness to vaccinate. The result of video squeeze frame are shown in figure 5.



Figure 5. The result of video squeeze frame

According to questionnaire after showing public service advertisements to vaccinate Covid 19 on the squeeze frame, we get that 97% of the community is willing to vaccinate Covid 19.

4. CONCLUSION

In this research we present that the console can be used in one form of digital public service advertisement in the form of a squeeze frame. With the use of this console, the audio video mixer process can be carried out more easily, and public information provided to the public is also easier to accept. The results of this research show that 97% of respondents will take the covid vaccine and 95.8 % of respondents are interested in this console in terms of usefulness, ease of use, ease of learning and satisfaction. This Vmix Console contain with squeeze frame for public advertisement is a novelty for this research.

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