

Technologies that Have Shaped Film Editing  
A Comparison Between Adobe Premiere Pro and Avid Media Composer  
And the Direct Impact They Have on Non-Linear Editing  
Melissa Baird  
Utah Valley University

## ABSTRACT

Over the course of my academic studies I have been told that Avid Media Composer is second to none. However, many of my fellow student peers disagree, and instead say Adobe Premiere Pro is the superior software. Thus the question arises: “Which editing software is better?” These two editing programs have been competing with each other for multiple years in the film industry. Needless to say, the age old question of Avid vs. Premiere has been beaten like a dead horse—yet no one seems to be answering the question.

This paper reflects on what makes a non-linear editing program approachable, efficient, and superior within the film industry. It is important that students like myself understand where they should be placing their focus, or they may be behind when entering the industry, and despairingly find themselves stuck in another learning curve. It is vital that we as students and aspiring editors know which program to spend our time on in order to master the skills necessary to continue expanding and improving our industry.

By learning more about the software and technical aspects of Avid and Adobe, I have gained supporting evidence that presents a solidified conclusion for students when choosing a non-linear editing software. Non-linear editing has given editors within the film industry more creative freedom, and it is imperative that we understand what inhibits or promotes that creative freedom when tying together a visual story. Through gathered articles, forums, and several text books, I have compiled a comparison between Avid Media Composer and Adobe Premiere Pro. This comparison will reveal the strengths and weaknesses of each program, as well as which NLE program students should spend his or time learning in order to fully be prepared when entering the professional industry.

## TABLE OF CONTENTS

<b>ABSTRACT .....</b>	<b>2</b>
<b>INTRODUCTION .....</b>	<b>4</b>
<b>HISTORIOGRAPHY .....</b>	<b>5</b>
A BRIEF BACKGROUND ON AVID MEDIA COMPOSER.....	6
A BRIEF BACKGROUND ON ADOBE PREMIERE PRO.....	8
<b>COMPARING AND CONTRASTING AVID AND ADOBE PREMIERE PRO .....</b>	<b>9</b>
PLUGINS.....	10
EDITING SPEED.....	13
<b>ABOUT THE MOTION TRACKING ASPECT WITHIN EACH PROGRAM .....</b>	<b>17</b>
ADOBE AND MOTION TRACKING .....	18
AVID AND MOTION TRACKING .....	20
<b>ABOUT THE ASSET MANAGEMENT ASPECT WITHIN EACH PROGRAM.....</b>	<b>23</b>
ADOBE AND ASSET MANAGEMENT.....	24
AVID AND ASSET MANAGEMENT .....	26
<b>ABOUT THE VR ASPECT WITHIN EACH PROGRAM.....</b>	<b>30</b>
ADOBE AND SUPPORT OF VR SOFTWARE .....	31
AVID AND SUPPORT OF VR SOFTWARE .....	33
<b>FINAL CONCLUSION.....</b>	<b>34</b>
<b>REFERENCES.....</b>	<b>39</b>

## INTRODUCTION

The topic of Avid Media Composer vs. Adobe Premiere Pro has been mulling around the film industry for a while. The debate on which video editing system is better has the industry torn. While both systems are revolutionary to the industry, there has not been a huge revelation as to which one aspiring editors and students should focus on learning. Thus, once finding a job in the field, editors may be behind in the programs, and be trapped in a new learning curve that puts their work behind or makes it more difficult. I have found that many students have the same question I do, yet there is little research that outlines Avid and Adobe in the clear-cut terms we are looking for.

As students we have found that the academic instructions for Avid are concise, easy to follow, and feasible. However, the actual use of Avid's software is frustrating, cumbersome, and inconvenient. Adobe on the other hand is the exact opposite—the academic manual is hard to understand, but the initial software is easier to use. As students looking to enhance our talents and abilities this is an issue that is costing us time and money. We need a solution to finding which editing program is worth pushing through the frustrating aspects, and what program is actually worth the copious amount of hours learning in the end—the academically efficient or the smoother workflow and interface.

The following results are intended to provide a better understanding of the actual software systems, what sets them apart from each other, and which, ultimately, is the more efficient program. Understanding each program will help editors like myself identify the software we value the most when editing a film together in a non-linear style, thus giving a more focused perspective and agenda when progressing towards our professional careers.

When debating between these two Non-Linear Editing (NLE) programs, it can be argued that the opinion is completely subjective. I believe the answer to my initial question is far from objective, but it is yet to be determined, and I am compelled to take a closer look at the technical aspects associated to the aforementioned software. There were three specific elements within NLE programs that I focused on while trying to find the answer to my initial question: motion tracking, asset management, and the support of virtual reality (VR) software.

### HISTORIOGRAPHY

As I began my research I found it beneficial to define what exactly an NLE program is before analyzing Adobe Premiere Pro and Avid Media Composer. According to a document found on Museums Victoria's website, Authors Jackling, Withers, and Livingston explain that Non-Linear Editing "is achieved by loading the video material into a computer from analogue or digital tape. The editing process creates a new 'tape' by storing all the commands entered by the operator. This method allows the operator to cut, copy and paste scenes in any order and make any changes desired" (Jackling, Withers, & Livingston, 2009).

This process was revolutionary to the film industry. In addition to this, I found an article written by Motion Elements titled: *Understanding Linear Editing vs. Non-Linear Editing*. In this article Motion Elements elaborates on NLE software in more detail and states, ". . . it allows you access to any frame, scene, or even groups of scenes at any time. Also, as the original video footage is kept intact when editing, you are able to return to the original take whenever you like" (2013). This means that the software is non-destructive, allowing the editor more freedom to place footage anywhere within the sequence, and continually edit specific frames without damaging the original video file.

With this information in mind, I was lead to question the beginnings and background of Adobe and Avid. During my studies I was only instructed on how to utilize the software rather than about the history and development behind it. While continuing my research, several questions were instilled in my mind: “How was Avid and Adobe founded and created? Why did they become so successful and coveted by film editors within the industry?” To fully compare and contrast Adobe and Avid, it is important to understand the basic background and history of each program.

#### A BRIEF BACKGROUND ON AVID MEDIA COMPOSER

In 1987 William J. Warner Founded Avid Technology Inc. (2001). Warner developed a system to “copy video footage in real time to digital hard disks to allow editors to more easily view shots and quickly make trial cuts and changes” (2001). Approximately two years later in 1989 Avid introduced the digital NLE Media Composer system (2001). This revolutionized the film industry, specifically the post-production process, because it provided editors with “faster, more intuitive, and more creative ways to work than was possible with traditional analog linear methods” (2001).

In 1993 Avid's Media Suite Pro was described by *Computer Graphics World* as being “in a class by itself” and “the closest thing to real-time, non-linear video production available” (2001). Additionally, in its review of the Media Suite Pro 1.1 digital video editing system, *PC Week* said it “offers sophisticated editing tools for both novices and experienced users and sets a new standard for desktop video post-production” (2001). Along with these glowing reviews, Avid entered in to a partnership with Lucasfilm Ltd., and during that same year created a better NLE that combined features developed by *Star Wars* producer George Lucas

with Avid's existing editors (2001). Avid and Silicon Graphics Inc. continued to work together to create Open Media Framework Interchange standards for computer graphic and editing products, which would become a key enabling technology for all-digital post-production (2001). This industry-standard file format permitted the exchange of digital media among different platforms and applications (2001).

With this brief introduction to Avid's history I have established a better understanding of why this NLE became coveted by the professional industry. One thing I did find conflicting was the statement “offers sophisticated editing tools for both novices and experienced users and sets a new standard for desktop video post-production” (2001). While studying at Utah Valley University (UVU) my fellow students and I have found the Avid user interface (UI) to be inconvenient, tiresome, and frustrating. The Avid software created a huge learning curve for my fellow students and I, but our professors were adamant that we become certified to use the NLE due to it being the professional industry standard. This is extremely discouraging as the software is not as sufficient for aspiring editors as it claims to be.

While the aforementioned claim of Avid being an editing tool for beginners and professionals appears to be untrue, I need more information about Adobe premiere, and it is only after learning about Avid's competitor—Adobe—that I can decide if pushing through the cumbersome learning curve and UI is worth it. With Avid being the main NLE my university focuses on teaching I lack the knowledge as to why other programs are deemed as “inferior”. Therefore, in the following paragraphs I have compiled a brief history of Adobe Premiere Pro in order to understand how it was established, as well as how it became one of Avid's biggest competitors within the film industry.

### A BRIEF BACKGROUND ON ADOBE PREMIERE PRO

Adobe Premiere Pro started as simply Premiere, and was introduced in 1991 for the Mac operating system. Like Avid, Adobe Premiere Pro was one of the first computer-based non-linear editing systems (Smith, 2019). Instead of a traditional video editing system comprised of expensive hardware, Premiere was software-only and could run on an affordable computer. With Adobe Premiere, the user could place clips on the timeline, add effects, transitions, and a soundtrack. It looks simple by today's standards, but it opened the door to anyone who wanted to learn the art of visual storytelling (2017).

There is a web article published by Creative Planet Network (CPN) staff titled *An Oral History of Adobe Premiere Software Evolution: The First 25 Years*. In this web article the CPN staff interviewed several of Adobe's lead employees to expand upon the NLE software. One of the interviews was with Laura William Argilla, the Director of Product Management, Professional Video, at Adobe. During the interview Argilla talks about the beginning of Premiere, and how the NLE's reputation in the market wasn't that strong. Argilla states, "It was seen more as a consumer application or being used at kind of second-tier delivery work" (CPN Staff Published: May 5, 2017).

Despite Premiere's slow start, it has now become one of the leading NLE programs within the industry. As the interview continues, Argilla confirms Premiere's growth and rising popularity by saying, "Premiere is now used in motion pictures, television shows and news production around the world. It's also being used by a growing group of content creators . . . It's become the number one NLE on the market" (CPN Staff Published: May 5, 2017). Based on this

small amount of Premiere's history alone, I am led to wonder why the sudden growth in popularity? Could this be due to the accessible and smooth workflow Premiere's UI offers?

As the article continues, they expand upon the pros of Premiere's developing NLE Software, and the interviews stem from Adobe's qualified employees to several experienced editors. One interview that stuck out to me in particular was with Vinnie Hobbs, a Music Video, Feature, and Documentary Editor. Hobb's describes his experience with using Premiere as efficient and effective. Hobb's states, "The ability to work with raw R3D, ARRI, and other video formats natively in Premiere Pro lets me meet my deadlines faster than ever before . . . With Premiere Pro, I can focus on the creativity without being held back by technical roadblocks" (CPN Staff Published: May 5, 2017).

According to Hobb's, a four-time nominee for Best Editing at MTV's Video Music Awards, Premiere propels his creativity without the UI inhibiting his workflow and pace (Vinnie Hobbs). This led me to ask the question: "if such a statement is true, why is Avid still considered to be the industry standard when it comes to NLEs?" In order to address this question I will compare and contrast Adobe Premiere Pro and Avid Media Composer. This will provide which program outranks the other in the eyes of working professionals within the film industry, and answer the question why Avid still seems to reign supreme.

#### COMPARING AND CONTRASING AVID AND ADOBE PREMEIERE PRO

Before I dive in to the three main elements I will analyze within each program (motion tracking, asset management, and the support of virtual reality (VR) software) I want to focus on other software elements that are either the same, similar, or completely different from one another. This will allow better results in trying to determine which program students like myself

should focus on learning. Looking at each program extensively will highlight key differences that could be detrimental, or beneficial, to an editor's workflow. This will also help students like myself decide which NLE will meet the requirements and needs for the professional work he or she wants to produce.

What I mean by this is, for example, is that some editing software is better for creating content for company websites and social media (such as youtube), while other software is more adaptable for the experienced editor who has to cut a feature film together before a deadline. This is a subject that could be debated endlessly, and it isn't my intention to say which NLE is the end-all or be-all solution for every editor out there. Like I've stated before, my main goal is to help students like myself understand which NLE, between Adobe Premiere Pro and Avid Media Composer, should be his or her main focus in order to be best prepared for the professional work he or she wants to produce.

## PLUGINS

NLE systems are able to use automated pre-sets that eliminate a lot of the manual work editors would normally have to perform. Plugins can be used for a wide variation of things within an NLE, such as color grading, transitions, and effects. Both Avid and Adobe offer a full set of plug-ins for users to fully maximize his or her NLE software.

In Brandon Gaille's article *Adobe Premiere vs Avid Media Composer*, he describes how efficient Adobe is with the use of these plugins. Gaille states, "Premiere does an excellent job integrating with After Effects and Audition so it becomes possible to eliminate intermediate rendering. This also allows users to collaborate easily on shared sequences across the entire Adobe platform" (Gaille, 2017).

Additionally, Gaille discusses Avid's ability to utilize plugins within the Media Composer Software as well. Gaille continues his discussion and says, "Avid offers similar options through plugins from NewBlue, their proprietary production pack, and optimization through Sorenson" (Gaille, 2017). NewBlue is a strong addition to Avid as it "empowers video editors and broadcasters with proven post-production and live broadcast toolkits that simplify processes and deliver superior results" (Video Solutions for Live & Post Production). Unlike Adobe, Avid does not have as many programs across its' platform—aside from Pro Tools—and uses third party businesses to provide compatible plugins for users to install within the NLE software.

Concerning Gaille's mention of Sorenson I had to research further into what it initially was. According to the official Sorenson Media website, Sorenson—Also known as Sorenson Squeeze—*was* an American software company specializing in video encoding technology (Sorenson Media). As of today when you visit the current website there is a page notifying visitors that they are "no longer accepting orders for [their] Squeeze products and all Squeeze services will be disabled as of September 1, 2018" (Sorenson Media).

The closure of Sorenson Squeeze created several issues for Media Composer users. Some of these issues are addressed in a web article posted on the ProVideo Coalition website. The article, *Sorenson Squeeze Reaches its End of Life*, was written by Kevin P. McAuliffe—a three-time North American ProMax award winning editor and a Media Composer editor for over 15 years. McAuliffe described Sorenson Squeeze as "THE application for compressing files for the web, for approval, for demo reels, and for pretty much anything else you can think of, when it came to converting your file from the master format to anything else" (McAuliffe, 2018).

This begs the question: What alternatives for compressing files do Media Composers use now? Continuing his article McAuliffe answers this question, and states, “Adobe Media Encoder was the application that really would have been the nail in the Squeeze’s coffin, as it’s included in every subscription to the Creative Cloud, and every editor has the Creative Cloud, no matter what NLE you use, as we all use After Effects, and Photoshop in one form or another” (McAuliffe, 2018). If Adobe Media Encoder would have ended Sorenson Squeeze anyway, it leads one to assume that Adobe’s Products are on the verge of becoming the superior platform, because of McAuliffe’s description of the fact that editors using NLE programs rely on Adobe Media Encoder to compress their files regardless.

Based on the research I’ve gathered thus far, Adobe seems to have integrated an easily accessible UI that gives editors access to an entire platform. Similar to Avid, third-party plugins are available for adobe as well, but the elimination of immediate rendering in Adobe is a major plus for editors when comparing the two NLE programs. Avid Media Composer seems to rely heavily on third-party businesses to contribute plugins for their software. Although Avid offers a complete plugin bundle, as well as several other plug-ins available for purchase on their official website, editors still lean towards Adobe to produce the content they want (2020).

Therefore, when it comes to plugins Adobe Premiere Pro appears to have the edge over Avid Media Composer. The use of plugins allows an editor to save his or her most important resource: time. Plugins let you utilize or design something that did not previously exist (2020). They sit within your application’s interface as if they had always been there (2020). These are essential elements an editor should understand because in a world of advancing technology it is

vital that he or she is able to not only be creative, but quick and efficient when making an edit to a project.

### EDITING SPEED

As I have continued my studies I have been told multiple times by professors that being able to edit quickly is vital when pursuing a career as a professional editor. Editing is generally poorly understood, and always comes near the end of the production process, time is usually working against the editor, and being fast is often the difference between getting a video out the door, and getting a *good* video out the door (Rostad, 2013). Urgency alone is not the reason to value speed. In being able to operate one's system quickly and efficiently, more time is left over for aesthetic and creative consideration (Rostad, 2013).

In order to be able to edit on the fly, it is important to know your NLE program inside and out. This is where the challenge comes for students like myself when deciding where to place his or her time, effort, and money in order to be a capable and professional editor upon graduation. There is a learning curve for both Avid and Adobe. While studying I observed that the academic instructions for Avid are concise, easy to follow, and feasible. However, the actual use of Avid's software is frustrating, cumbersome, and inconvenient. Adobe on the other hand is the exact opposite—the academic manual is hard to understand, but the initial software is easier to use.

Referring back to Brandon Gaille's article, *Adobe Premiere vs Avid Media Composer*, he addresses the similarities and differences between the two NLE programs when it comes to enhancing an editor's speed. Gaille states, "Both Adobe and Avid have a certain learning curve that must be followed . . . Premiere tends to be a little easier to learn and get started on a project compared to Avid" (Gaille, 2017). This correlates with my initial observation that adobe is the

more user friendly program between the two. Something that made me reconsider pushing Avid to the side completely and solely focus my efforts to learn Adobe was another statement from Gaille within the same article. Gaille states, “On the other hand, new users can end up with a cleaner project with the helpful tips and built-in assistance options that are included with Avid” (Gaille, 2017).

This means pushing through the cumbersome and frustrating learning curve of Avid could, potentially, be the best solution in creating the quality content the industry demands from editors today. While it is still too soon for me to make an informed decision on which program has the advantage over the other, the aforementioned statement brings a positive light to Avid, and I am back to being torn between which program my fellow students and I should focus on learning. In order to grasp a better understanding of which program aids an editor in his or her speed in completing an edit I need to search for more resources to support Gaille’s theory.

The biggest dilemma I seem to be facing while compiling my research about both of these programs is the lack of scholarly articles on either program. There are several manuals and technical specifications posted on scholarly databases, but I have yet to find information about the major similarities and differences between Avid and Adobe that continually divide editors within the film industry. A solution I have found to this problem is by finding information posted within official Avid and Adobe forums on each official website.

This has been incredibly beneficial as editor’s interacting with both NLE programs share his or her problems and solutions. Developers and veteran users of each program also participate in these discussions—providing quality and reliable feedback to users questions and concerns. I have also found a plethora of other information on separate websites that aren’t from official

sources, but are posted by people who are either working in the industry professionally or have a strong qualifications with the software.

In a blog written by Oliver Peters—a well-versed editor that has worked in the radio, television and film industries since 1970—he explains that the trimming in Avid Media Composer continues to be the best there is and has been augmented by Smart Tools for FCP-style contextual timeline editing (Peters, 2014). Peters article was posted in 2014, and with technology constantly advancing and changing on a yearly basis I was worried that this information would no longer be valid.

Quickly recalling Gaille’s article again, I found that it was published more recently in 2017, and although three years can mean leaps and bounds in the technological world I was surprised that Gaille had similar results as Peters. Gaille describes the edge Avid holds over Adobe when it comes to efficiently saving time when trimming a sequence. Gaille States, “From a pure trimming standpoint, the augmented process of Avid for contextual timeline editing, combined with the syncing technologies, tends to make editing speeds faster. Adobe Premiere can accomplish the same outcome, but it may take additional steps in the workflow in order to do so” (Gaille, 2017).

That last sentence piqued my interest, and I began to wonder if Adobe is still behind when it comes to trimming compared to Avid. In a web article posted by Chris Salters, *Want to Work in Hollywood? Avid is the NLE to Learn*, Salters made an empirical statement when it comes to the argument Adobe vs Avid. This article was posted on August 19, 2019, and it leads me to believe that this is a relevant point when trying to understand why Avid is the industry standard instead of Adobe. Salters states, “new editors who start in Premiere Pro . . . have a

tendency to lean heavily on the mouse, simply because the UI makes it so easy . . . that can make jumping into Avid more of a challenge, on top of making you slower in the timeline” (Salters, 2019).

Arguably, Adobe is similar to Avid in this sense, and has the potential within the interface to enable hotkeys to allow faster trimming. Therefore, editors should not have to lean so heavily on the click, drag, and drop method when using Adobe. It could be argued that the UI for Adobe, although straightforward and easily used when compared to the UI of Avid, inhibits aspiring editors as it creates a slower workflow. Contrastingly, an editor can map certain tasks to his or her keyboard, providing shortcuts to speed up the process of the individual’s workflow within Adobe. Some hotkeys are already enabled within the Adobe NLE program—like the JKL keys used to search through your footage entirely with the keyboard in Avid (Golibersuch & Rubin, 2010). The initial problem with trimming in Adobe is that you have to manually do some keyboard mapping to get the same type of workflow you would already have setup for you when opening Avid.

Students like myself still have to place his or her focus on one NLE program to create a strong and fast workflow. Towards the end of Chris Salters article he makes a strong notion, he states, “. . . it can be a good idea to start with Avid’s keyboard-first interface. It will make you a faster editor to begin with, and then once you have the habit down, it’s easy to pick up the shortcuts in other NLEs” (Salters, 2019). This would explain why my professors are adamant that my fellow students and I understand how to use Avid. Not only because it is still declared to be the film industry standard, but because it will essentially help students learn how to work with other NLE programs more easily.

Overall, the initial impression I have—based on the information above—when it comes to enhancing an editor’s speed is that Avid has the edge over Adobe. The task may seem daunting to embrace the complex UI of the Avid NLE software, but according to industry professionals it is vital when acquiring fundamental editing techniques every editor should have. The toolset in Media Composer encourages editors to cut with his or her keyboard rather than the mouse. This is faster than editing with a mouse, and is a great skill for all editors to practice no matter which NLE they use (Salters, 2019).

#### ABOUT THE MOTION TRACKING ASPECT OF EACH PROGRAM

While looking at the features each software is capable of performing I wanted to address the ability to utilize motion tracking. I have chosen to focus on this specific aspect due to the necessity that a professional editor should have the use of this feature among his or her skillset. The use of motion tracking can be used to censor copyrighted logos—initially saving the production a lot of time and money they would have otherwise had to spend on obtaining the rights to use said copyrighted material (Sysak, 2016). Editors can also create animation effects that will follow a specific path, and, for example, use the effect to make it look like someone has super powers or supernatural abilities (Sysak, 2016). These are just a few examples of the abilities motion tracking provides for an editor.

In order to fully understand which program has the superior motion tracking software, I wanted make sure I understood the actual definition of what the feature is, as well as what it does in an NLE program. According to the official Adobe website motion tracking allows editors to “*track* the movement of an object and then apply the tracking data for that movement to another object . . . [creating] compositions in which images and effects follow the motion” (Forde, 2016).

This means that motion tracking can also be used for combining elements filmed separately, such as adding video to the side of a moving city bus or a star to the end of a sweeping wand (Forde, 2016). Another extremely beneficial use for motion tracking editors can utilize is being able to stabilize footage to remove the jostling (camera shake) of a handheld camera (Forde, 2016). Bearing the previously mentioned benefits motion tracking provides in mind I will now address how Adobe and Avid each utilize this feature.

### ADOBE AND MOTION TRACKING

A surprising realization I have had while compiling my research is the fact that Adobe's official website offers extensive and thorough descriptions on how to implement the Premiere Pro software tools. The academic text books I have sifted through over the course of my studies has been challenging, and has hindered my ability to learn Premiere Pro's software in depth. As I have turned to the official website to learn more about Adobe's motion tracking feature I am thoroughly impressed with the straightforward and concise information.

There is a dedicated webpage on Adobe's website that discusses what motion tracking is, what it can be used for, and how you can achieve those things within the program. Along with these step-by-step instructions Adobe provides several links to other online resources for motion tracking and stabilization (Forde, 2016). Not only does Adobe provide additional resources for users to easily access, but Adobe also breaks down multiple motion tracking workflows within the software.

For example, the Mask Tracker allows editors to draw masks around specific objects within the video—tracking that specific object only in a scene (Forde, 2016). An editor can also accomplish Face Tracking. Simple mask tracking lets you quickly apply effects only to a face,

such as selective color correction or blurring a person's face, and more (Forde, 2016). The official Adobe website goes on to say that with face tracking you can track specific parts of the face such as pupils, mouth, and nose, allowing an editor to isolate and work on these facial features with greater detail (Forde, 2016). This means editors can do things like change colors of the eyes or exaggerate mouth movements without frame-by-frame adjustments (Forde, 2016).

Another workflow within the motion tracking feature in Adobe is the 3D Camera Tracker. Editors can use the 3D Camera Tracker to analyze video sequences to extract camera motion and 3D scene data (Forde, 2016). Editors can then correctly composite 3D elements over 2D footage (Forde, 2016).

The Point Tracker is another incredibly useful effect when utilizing the motion tracking workflows in Adobe. With the Point Tracker users can track one or multiple reference features in a clip (Forde, 2016). An editor can accomplish one-point tracking, two-point tracking, four-point tracking or corner pin track, and multiple-point tracking (Forde, 2016).

With one-point tracking editors can track a single reference pattern (a small area of pixels) in a movie clip to record position data (Forde, 2016). Similarly to one-point tracking, when an editor uses two-point tracking he or she can track *two* reference patterns in a movie clip and use the relationship between the two tracked points to record position, scale, and rotation data (Forde, 2016). Four-point tracking or corner pin tracking allows users to track *four* reference patterns in a movie clip to record position, scale, and rotation data (Forde, 2016). The four trackers analyze the relationship between four reference patterns, such as the corners of a picture frame on a television monitor. This data is applied to each corner of an image or clip to "pin" the clip so that it appears locked in the picture frame or monitor (Forde, 2016).

Finally, multiple-point tracking allows users to track as many reference patterns in a clip as he or she likes. Editors can manually add trackers within the Analyze Motion and Stabilize behaviors. When you apply a Track Points behavior from the Shape behaviors subcategory to a shape or mask, a tracker is automatically assigned to each shape control point (Forde, 2016).

The last effect within the motion tracking workflows in Adobe I will address is the Warp Stabilizer VFX. When using the Warp Stabilizer VFX an editor can stabilize motion (Forde, 2016). It removes jitter caused by camera movement, making it possible to transform shaky, handheld footage into steady, smooth shots (Forde, 2016).

All of these effects within the Adobe motion tracking workflows enhance an editors skillset if he or she is able to fully utilize and operate them. While I am highly impressed by the amount of options and abilities the Adobe software provides, I am left wondering if Avid will have as many of these same features and abilities, or maybe even more. I will now turn to Avid and look at the motion tracking capabilities and features offered within Media Composer.

#### AVID AND MOTION TRACKING

In a book titled *Media Composer Fundamentals II*, an Avid official curriculum published work, there are several lessons and exercises demonstrating how the software should be used. In exercise 10, “Tracking and Blurring Objects”, the official curriculum gives a step-by-step explanation of how an editor can use “tracking with effects” (Castle, 2016). Overall, the exercise shows users how he or she can apply the Blur effect to a clip and use tracking to keep the effect localized to the faces of two men whose identities the Producer needs the editor to obscure (Castle, 2016).

Although Avid's official curriculum text book is extremely thorough and straightforward in the lesson and exercise, there is not a lot of information about the types of tracking effects Avid has to offer, and I am left wondering what other motion tracking abilities Avid can perform. The overall structure of the curriculum is straightforward and easy to comprehend. With the lessons for each feature of Avid's software broken down to layman's terms, as well as step-by-step instructions of how to use said features (including visual references of the actual feature within Avid), it is easy for users to understand the implementation of Media Composer.

According to Avid's official curriculum textbook Media Composer has an advanced tracker built-in that can track up to 8 individual points at a time. Editors can use the tracking points to track either multiple objects, or track a single object with complex movement (Castle, 2016). For example, one tracker may be enough to track an object if it is only moving up or down and left or right — e.g. a person walking by, left to right in the background of a static shot. If, however, that person is also moving toward or away from the camera, editors may need two or more tracking points to accurately track them (Castle, 2016).

Unlike the official Adobe website, the official Avid curriculum text book only emphasizes one aspect of the motion tracking feature the NLE can perform—the Blur effect. I was disappointed that there was only a small mention of how editors can use the motion tracking ability with tracking points. In order to find more information about Avid's motion tracking capabilities I turned to Steve Hullfish's book *Avid Uncut: Workflows, Tips, and Techniques from Hollywood Pros*.

Hullfish spent a decade editing for *The Oprah Winfrey Show*, and is a sought-after trainer and consultant for the world's largest media companies (Hullfish, 2014). In Hullfish's book he

emphatically states in the introduction that his book is *not* about “learning how to edit” (Hullfish, 2014). Instead, Hullfish intends his work be for the “relatively experienced editor”, and help him or her navigate one of two things: “1. Switching from another editing program to Avid, or 2. Helping an experienced Avid editor understand a bunch of fairly significant developments that have occurred in recent years *inside* the Avid software . . .” (Hullfish, 2014).

I bring up the intentions Hullfish had for readers because I found his discussion about effects to be lacking the deeper information I was looking for concerning this research. Instead of diving deeper into the capabilities and desired effects an editor can achieve using the effect palette, specifically with motion tracking, Hullfish focused on “general effects concepts” (Hullfish, 2014). This was confusing to me due to the fact that only the basic principles of effects in general were discussed.

I found similar statements Hullfish made to be redundant as I had read them in *Media Composer Fundamentals I*, an official Avid curriculum for *beginners*. For example, when Hullfish addresses general editing concepts he talks about collapsing, or nesting, and stepping in and out of layers of effects on a timeline. In *Media Composer Fundamentals I*, there is a detailed breakdown in Lesson 8 of nesting effects, as well as changing the order of nested effects. (Castle, Boden, Tilden, Cook, & McAllester, 2016). If it was Hullfish’s goal to help the “relatively experienced editor”—not a beginner—then why did he only *generalize* the effects within Avid Media Composer?

I bring this argument up because when learning how to use the Avid Media Composer software the basic concepts are easily understandable and straightforward when following the official curriculum text book. However, as an aspiring editor when I want to learn about more

effects like motion tracking I am left with very little information. When students, trying to develop his or her editing skills, are struggling to excel in such an overwhelming software without information, it becomes an extremely off-putting process. In an attempt to find more information about motion tracking in Avid's software I turned to the official Avid forums. This resulted in long hours of fruitless results. I was going in circles as I sifted through countless forums that had little to no information about motion tracking specifically.

Overall, I was dissatisfied that Avid did not have a webpage specifically dedicated to the multifaceted features of motion tracking like Adobe. Outside of the official curriculum publications it is an exasperating procedure to find information regarding the Avid Media Composer software about motion tracking. I was able to find some video tutorials demonstrating how to implement motion tracking on a website that hosts official Avid blogs, but I still have yet to find information listing the full features of motion tracking within Avid. Hopefully as I continue my research on Media Composer I will gain more positive results when looking at asset management and the support of VR software.

#### ABOUT THE ASSET MANAGEMENT WITHIN EACH PROGRAM

One of the most important skills an editor can bring to post-production is *organization*. An editor who knows how to keep track of his or her assets will only help make his or her workflow faster and more efficient. This is especially true if an editor works in a shared environment where there may be several different editors working on the same project at different times (Till, 2015). Therefore, one of the most crucial steps in post-production is locating and managing your media clips and assets (2017). As aspiring editors, my fellow students and I must have an easy to understand, readily searchable, and concise file system for

footage and other media files when setting up a post-production workflow (Hanby, 2017). In the following paragraphs I will compare and contrast the way Adobe and Avid handle asset management.

### ADOBE AND ASSET MANAGEMENT

The Project Panel in Premiere Pro lets users organize assets effectively (2019). For example, an editor can use bins, rename assets, remove unused assets, consolidate duplicate folders and define a different thumbnail for clips (2019). When it comes to assets Premiere Pro also allows users to edit cells in the project panel, view clip properties, and view the field order for clips (2019). Another beneficial element of Premiere Pro is the ability to determine if a clip has interlaced or progressive scanning (2019). Not only can editors perform all of these tasks within Premiere Pro, but they can also change the frame rate of clips as well (2019). I will explain the use of some of these asset management features in further detail within the following paragraphs.

First I will explain Premiere Pro's use and abilities when it comes to bins and asset management. The use of bins is vital when setting up a workflow for a new post-production project. Bins can contain source files, sequences, and other bins (2019). The Project panel lets editors use bins that helps him or her organize project content in much the same way as folders in Windows Explorer or Mac OS Finder (2019). As an editor's project grows, he or she can make new bins to contain those items. Editors can use bins to store offline clips for batch capture, store main sequences and backup sequences, and organize files by type—such as video, still images, and audio files (2019).

When it comes to organizing bins Adobe allows editors to sort and view bins in three ways: list view, icon view, and freeform view. In list view all bins are listed vertically in a scrollable list (2019). Users can click the arrow to open the bins and view the files inside each bin (2019). In icon view all bins are listed horizontally in folders (2019). Users can click a folder to see the files inside (2019). This view allows an editor to see exactly what type of file is inside the bin (2019). Finally, in freeform view editors can organize his or her bins and files anyway he or she likes (2019).

To give the user even more control over how he or she can access and utilize bins Premiere Pro's software allows users to change a bin's behavior. While working in a project an editor may want to change the way he or she views his or her bins (2019). In the standard layout of Premiere Pro, users can see the hierarchy of his or her entire project, which is useful. However, sometimes an editor wants to open a bin in its own tab, or open in a new panel (2019). That way, editors can focus on the clips in a particular bin, sort clips in storyboard order in icon mode, or search for clips within a bin by typing in the search field (2019). Some editors like the bin window overlapping the interface, while others prefer to see bins open in place, or in new tabs (2019). Again, users can change the default behaviors of Project panel bins by editing the Bins preferences (2019).

The second thing that stood out to me while researching Adobe's asset management abilities was the fact that users can view clip properties. Premiere Pro includes clip analysis tools that editors can use to evaluate a file in any supported format stored inside or outside a project (2019). For example, after producing a video clip to be streamed from a web server, editors can use clip analysis tools to determine whether a clip he or she exported has an appropriate data rate

for Internet distribution (2019). The Properties panel provides detailed information about any clip. For video files, analyzed properties can include the file size, number of audio channels, duration, frame rate, audio sample rate, average data rate, and codecs (2019). The Properties panel does not show all these properties for every clip (2019). The file format of the clip that is examined determines the data shown in the Properties panel (2019).

Looking at these aforementioned features within the asset management of Adobe Premiere Pro I am impressed with the ability to create a smooth and organized workflow. Having software that allows for detailed control and customizable elements for assets enhances an editor's speed and efficiency when beginning to work on a new project. Again, all of this information was readily available, and easily accessible, on Adobe's official website—along with detailed instructions on how to implement these asset management features.

#### AVID AND ASSET MANAGEMENT

Now I will focus on how Avid Media Composer allows editors to organize efficiently and affectively through asset management. Although I criticized Steve Hullfish earlier about his lack of information regarding motion tracking in his book, he surprisingly had a lot of detailed knowledge when it came to asset management, and I have gathered some key points he discusses within the following paragraphs. These key points include consolidating and ScriptSync. Along with Hullfish's information I will also address what the Avid official curriculum text books say regarding asset management.

Editors use bins constantly to organize and manage his or her assets in a project. I have found differences and similarities between Avid and Adobe when it comes to bin management. In *Media Composer Fundamentals I*, it states that “the bin is far more than just a container. It also

functions as a database, a light table, and a log sheet” (Castle, Boden, Tilden, Cook, & McAllester, 2016). There is a special layout that goes with each of the functions the text book mentioned, as well as three quick-access buttons at the bottom of the bin window to change these layouts (Castle, Boden, Tilden, Cook, & McAllester, 2016). This is similar to Adobe Premiere’s ability to change between the layout of a bin, as well as the view of a bin.

The first bin layout is the Text view. The Text view displays the contents of the bin in a list (database mode), and this is the default view (Castle, Boden, Tilden, Cook, & McAllester, 2016). In this layout an editor can choose to display additional columns for tracking metadata information associated with each item (Castle, Boden, Tilden, Cook, & McAllester, 2016). The advantages of Text view is that it shows you a lot of information in a small amount of space, and quick access to all the information associated with your project assets (Castle, Boden, Tilden, Cook, & McAllester, 2016).

From my understanding Text view in Avid is similar to List view in Adobe. The main difference is that the metadata is available in the small space within the same bin view in Avid, whereas in Adobe users must look in the Properties panel in order to access the clip property information (2019). It is also important to understand that in Adobe the Properties panel does not show all these properties for every clip (2019). The file format of the clip that is examined determines the data shown in the Properties panel (2019).

The second bin layout in Media Composer is Frame view. Frame view shows you a representative frame for each item in the bin. It is a bit like looking at your shot on a virtual light table (light table mode). Because most editors are visually oriented, this can be a nice way to work. Frame view enables editors to easily rearrange your shots just by clicking and dragging

them to a new location (Castle, Boden, Tilden, Cook, & McAllester, 2016). In the Frame view layout editors can also change the frame size, and enlarge or reduce the frames within the bin. To organize the bin in Frame view even further, editors can select fill window, fill sorted, and align to grid from the choose bin drop down menu (Castle, Boden, Tilden, Cook, & McAllester, 2016).

Fill window arranges the clips to a grid pattern as wide as the users current window. Fill sorted is the same as choosing fill window, except the clips are arranged in the order they are found in Text view (Castle, Boden, Tilden, Cook, & McAllester, 2016). Align to grid is used when editors have been rearranging clips in the bin himself or herself, such as grouping together shots that are visually similar (Castle, Boden, Tilden, Cook, & McAllester, 2016). Editors can clean them up by having those shots aligned to the same invisible grid, without reordering or significantly changing location (Castle, Boden, Tilden, Cook, & McAllester, 2016).

Frame view in Avid is similar to Icon view in Adobe in the sense that users can see a representative frame for each video in the bin. In my assessment of Adobe and asset management I pointed out the fact that Adobe can define a different thumbnail for clips. Media Composer also has the ability to change the representative frame of a clip while in Frame view(Castle, Boden, Tilden, Cook, & McAllester, 2016).

Finally, the third bin layout in Media Composer is Script view. Script view is like a combination of Text view and Frame view with an added comments field (Castle, Boden, Tilden, Cook, & McAllester, 2016). Editors can type anything he or she likes in the comments field, but it is typically used for logging notes and keywords (log sheet mode). The comments users create here automatically appear in Text view, in the comments column (Castle, Boden, Tilden, Cook, & McAllester, 2016). The arrangement of columns in the last “Bin view” he or she choses to

display prior to switching to Script view determines the columns shown (Castle, Boden, Tilden, Cook, & McAllester, 2016). As in Frame view, editors can use the same methods to change the size of the frame (Castle, Boden, Tilden, Cook, & McAllester, 2016).

After comparing the third bin layout in Avid to the third bin layout in Adobe premiere I realized there are no common similarities between the two. There is a strict structure to increase organization while using Script view in Avid, whereas in Freeform view in Adobe users can arrange clips freely into a custom layout, unrestricted by any kind of grid and sort order (2019). In fact, the Freeform view in Adobe is more similar to the Frame view layout. Like Frame view in Avid, Freeform view in adobe allows editors to adjust the size of clips and align clips to a grid (2019).

Overall, Avid's use of bins when it comes to asset management is very similar to Adobe's, and it appears that both programs are capable of performing the same functions as one another. Something else that is similar between both programs is the ability to consolidate. Referring back to a key point in Steve Hullfish's book, he explains Avid's ability to consolidate, and how the process allows editors to duplicate entire clips for archival purposes—but in this specific instance, it allows the Avid system to look at a finished sequence and then save only the parts of the media clips that are actually used in the sequence (Hullfish, 2014). This is similar to Adobe's ability to consolidate because in Adobe an editor can combine duplicate media that have the same name (2019). However, in Adobe, bins with the same name are consolidated only if they are on the same level of hierarchy (2019).

While it is surprising that both NLE programs have so many similarities between them when it comes to asset management, there was one feature I did notice that Avid offers that

Adobe does not: ScriptSync. In *Avid Uncut: Workflows, Tips, and Techniques from Hollywood Pros* Steve Hullfish defines what ScriptSync is, as well as why it is an element that continues to help Avid reign supreme. Hullfish states, “ScriptSync allows you to import a feature film script and link takes (clips) to specific lines in the script that the take covers” (Hullfish, 2014).

Basically Avid implemented the idea of taking a lined script from a script supervisor, and incorporated it directly into its NLE (Hullfish, 2014). Once the script is imported, each take or set-up can be lined in exactly the same way that the script supervisor used to do, but with the difference that now those lines can be used in much the same way as an Avid bin, allowing the editor to instantly call up the lined shot into the Source monitor directly from the imported script (Hullfish, 2014).

ScriptSync is tremendous technology because it helps editors be better storytellers (Bové, 2017). More gets done, less story gets missed, and as editors we *must* be focused on the story. In order to give audiences the feeling of total immersion, we must operate behind the scenes, madly – one person in a room, madly pursuing an idea (Bové, 2017).

#### ABOUT THE VR ASPECT OF EACH PROGRAM

Immersive video has been around in different forms for decades, but it hasn’t been able to break through on a large scale until recently (2017). The most common VR video solution places the viewer inside a sphere and wraps a video stream around the sphere (2017). This solution can be even more immersive when using stereoscopic video, allowing the viewer to see a unique stream of wrapped video for each eye (2017). The key to this solution is capturing, formatting, and encoding in such a way that it can be easily wrapped around a sphere. The easiest way to accomplish this task is through equirectangular projection (2017).

In order to fully compare Adobe's and Avid's abilities to interact and produce immersive VR video it is important to understand what equirectangular projection is. If you think about the surface of a sphere, a single point is defined as having a latitude and a longitude coordinate. Now think about a standard video frame. A video frame has a width and height, with points defined as X and Y coordinates (2017). Equirectangular projection simply unwraps the sphere, mapping the longitude to the X coordinate, and the latitude to the Y (2017). Bearing this information in mind, I will now compare Adobe's and Avid's use of immersive VR, starting with Adobe.

#### ADOBE AND SUPPORT OF VR SOFTWARE

Even though working with equirectangular projection can be a challenge, it is not that different from any other video format. Most of Adobe's tools and tricks are relatable. Trimming, splicing, and track manipulation all work the same (2017). Even many of the most commonly used effects work well with equirectangular projection (2017). One feature in Premiere Pro can be especially helpful with immersive video: proxy workflows (2017).

Some equirectangular video can be as large as 8,000 pixels wide by 8,000 pixels high—much larger than most other frame sizes (2017). Video of such high resolution is difficult to decode in real time, even with hardware acceleration (2017). Premiere Pro's new proxy workflow allows users to ingest this material and begin editing with it, while lower-resolution 2K versions are generated in the background, ready to take their place on the timeline with the click of a button (2017).

By enabling the VR Video display in either the Program or Source monitor, Premiere Pro allows the editor to step inside the sphere and view the video from a user's perspective (2017). Using VR Video display, editors can simulate different viewing experiences with his or her

quirectangular video, for example, using a VR headset such as the Oculus Rift or on a desktop through YouTube or Facebook (2017).

When an Editor is in the VR video display he or she can immediately change his or her perspective. By simply clicking and dragging view inside the sphere, it allows the user to easily pan and tilt (2017). At any time, he or she can quickly recenter his or her perspective by double-clicking anywhere within the view (2017). The sliders along the right and bottom edges allow him or her to control the tilt and pan, respectively (2017).

The numeric fields alongside each slider provide editors with exact feedback of his or her viewing position, but also allows him or her to enter his or her own values (2017). Positive values pan to the right and tilt upward, while negative numbers move the editor's perspective to the left and downward (2017). The radial knob at the bottom of the display provides more-visual feedback as to which direction the editor is currently facing, but it also allows the editor to click and drag within to pan his or her perspective left and right (2017). The knob is unique in that it allows editors to spin completely around and keep going past his or her starting point (2017).

According to the official Adobe website, Adobe Premiere Pro has long been the standard tool used by editors working with immersive VR video (2017). Premiere Pro provides editors with the tools to better view, export, and share VR video. In addition, the market is quickly growing for everything related to VR video: rigs, cameras, equirectangular video stitchers, effects, VR headsets, and even in-application headset monitoring (2017).

Immersive VR video is emerging and exploding. It's different than stereoscopic 3D in that a small handful of large electronics manufacturers aren't driving the technology (2017). It is

being nurtured by hundreds of companies, large and small, many working together, and Adobe continues to contribute (2017).

#### AVID AND SUPPORT OF VR SOFTWARE

On the Avid blogs website, an official partner of the Avid incorporation, Ross Shain wrote an article entirely dedicated to the use of VR in Media Composer. Shain describes the process editors follow when dealing with immersive VR video as “generally [involving] a fair amount of post work” (Shain, 2017). The equirectangular format introduces pixel distortion (remember the sphere unwrapped to a flat image) and simplest tasks like adding titles or isolated color correction need consideration. Some of these most typical tasks include reorienting footage, removing objects, masking for color correction of fixes, inserting 2D into 360, and stabilizing smooth camera motion (Shain, 2017).

Similarly, Adobe is also able to work with effects, and help an editor complete the aforementioned simple tasks listed above. Three common effects used in equirectangular projection are Dissolves, Color (Lumetri), and Speed (2017). These effects do not alter a pixel’s position enough to cause an issue. The basic rule is that if an effect changes a pixel’s vertical position, it’s unlikely to work (2017). Consider how a pixel’s vertical position affects its horizontal distortion once perspective is applied. For example, Horizontal Squeeze or Wipe works, while a simple Picture-in-Picture effect looks distorted, because it scales both the vertical and horizontal dimensions of the image (2017).

Adobe can also perform compositing in the Premiere Pro software. According to the official Adobe website, editors can composite equirectangular imagery on top of other equirectangular imagery as long as he or she does not change its vertical position and scale

(2017). An editor could shoot an object against a green screen in equirectangular and chroma key it on top of a background image (2017). However, in Adobe, an editor cannot composite traditional flat video on top of equirectangular without additional steps (2017). To work with flat imagery, such as a title, on top of equirectangular, it has to be projected into the sphere (2017).

The problem I seem to be running into yet again when researching a specific element of Media Composer's software is the lack of accessible information. While I have found blog articles from an official partnering website of Avid, there is no specific software information like that I have found on Adobe's official website. However, with the small bit of information I was able to find, it appears that Avid and Adobe has similar elements with the immersive VR feature within each respective program.

#### FINAL CONCLUSION

In conclusion, I have come to an understanding of the approach students, like myself, should take when considering which program he or she should focus on learning during his or her studies. It all boils down to this: editors need to be flexible when it comes to learning NLEs. Therefore, if students wish to be successful in the professional industry, I propose it would be beneficial for him or her to learn both Avid Media Composer and Adobe Premiere Pro.

Editing tools do not cut together great stories all by themselves—editors do (Salters, 2019). Earlier I mentioned the importance of understanding the basics when developing a workflow as an editor. Time is money in this industry, and while creativity is a vital skill an editor should have, he or she also needs to be able to work quickly and efficiently. Each of the NLEs have proved their strengths and weaknesses, and an editor should make the decision to use the best tool for the job he or she is working on (Salters, 2019). If a student is looking to become

an editor in the professional industry, he or she should build his or her skillset to match the demands of the modern industry (Salters, 2019).

There was an amazingly helpful article I came across when furthering my research on this topic. It was posted by Chris Salters, an experienced freelance video editor and motion graphic designer based in Dallas, Texas (Salters, 2019). Salters explains the importance of being a flexible and adaptable editor when it comes to using NLE programs. Salters states, “It’s incredibly valuable to be the person that’s super flexible” (Salters, 2019).

Learning more systems doesn’t just open you up to more job opportunities, it can change the way you think as an editor, making you more efficient and creative (Salters, 2019).

Therefore, it ultimately depends on what an editor wants to do with his or her career. If he or she wants to edit feature films or TV series then learning Avid is a must as it is still considered to be the industry standard. Although the Avid program is daunting and comes with a steep learning curve, the “[core] fundamentals” that come with learning the program can translate to other NLE software, and in the end enhance an editor’s adaptability (Salters, 2019). Learning these fundamentals can also help editors learn other NLE programs more easily (Salters, 2019). For example, Media Composer’s toolset encourages you to cut with the keyboard rather than the mouse. This is faster than editing with a mouse, and is a great skill for all editors to practice no matter which NLE they use (Salters, 2019).

It is important to note that during my research I ran in to several road blocks when searching for specific information regarding certain software features in Avid. Finding information on Avid’s official website was fruitless, and I could only find forums where the feature would be mentioned in regards to troubleshooting certain problems with it. Contrastingly,

by simply going to the official Adobe website, I could search for any specific feature and there would be detailed step-by-step instructions on how to use the feature—as well as define what it was.

The information provided in the official curriculum books distributed by Avid also had these detailed step-by-step instructions of how to use specific features, but when it came to searching for more information online—specifically through scholarly material—there was little to be found. It is interesting that Adobe had the opposite approach, and I could see the appeal of choosing Premiere Pro due to the easily accessible and immediate help when searching for more information about the software. Although, just because of Premiere’s ease and friendly UI and editor should not solely place all of his or her focus into learning Adobe’s program.

Ultimately, in order for an editor to achieve success and fully be prepared when entering the professional industry, there are several key things he or she should consider when deciding which NLE to focus on:

1. It is important to have the “core fundamentals” engrained into an editor’s workflow. This will help editors quickly learn the vast array of other NLEs on the market (Salters, 2019).

2. Editors are not only hired for speed and efficiency alone. Editors are also hired for their mind, ideas and creativity. Therefore, editing tools do not make a great editor by themselves, they enhance an editor’s ability to cut together a story (Salters, 2019).

3. Being flexible and having a solid understanding of multiple NLE programs makes and editor more desirable and useful in the industry.

4. Any NLE program a first time editor chooses to learn will entail a learning curve.

Therefore, considering Avid as a starting point to learn the fundamentals creates a solid foundation in work ethic, then an editor can move on to other NLEs like Premiere Pro with ease.

With the four key points listed above students like myself can have a better understanding of where he or she should place his or her focus when choosing an NLE. Technology will forever be advancing and changing, and with it the fads and preferences of NLEs in the film industry will also constantly be changing. I have a better understanding as to why Avid is still coveted and regarded by professionals as the industry standard, but I don't believe it is the end-all, be-all, for editors.

I agree with the aforementioned information that editors need to be flexible and adaptable. Therefore, it seems the most logical that students start with Avid Media Composer, and then move on to other NLE programs to add to his or her skillset. It is also important for aspiring editors to keep in mind the kind of work he or she wants to produce in his or her future career. For example, choosing to become a feature film editor requires the ability to use and understand Avid—as well as other NLEs. Whereas creating promotional advertisements for businesses or websites can be done with Premiere Pro alone.

It would also be beneficial for students looking to pursue a career in editing for features or TV series to find an instructor or mentor who is experienced with Media Composer. The lack of information that is easily accessible for users was incredibly frustrating during my research process. If I did not have my official Avid curriculum textbook required for a university course I would have had an even harder time obtaining information. Therefore, when learning the

complex software behind Avid Media Composer students should look to official curriculum text, as well as finding experienced mentors or instructors while learning the program.

The task of deciding the superior software between Adobe and Avid is not easily done. While I have found many similarities and differences between the two NLEs, I still can not definitively say which one is superior. I can only urge students like myself to develop his or her skillsets to match the demands of the professional industry. This means he or she must learn multiple NLE programs in order to be seen as proficient and desirable as an editor by modern industry standards.

In conclusion, my fellow students and I should focus on learning the basics in Avid Media Composer, and then move on to other NLE programs like Premiere Pro. Focusing on the basics will create a solid foundation in an editor's work ethic. Not only will this enhance an editor's speed and proficiency, but it will also change the way an editor approaches a project. This will also change how he or she thinks creatively when utilizing several different tools in different NLEs—creating more freedom when cutting a story together. Only after an editor has the core fundamentals engrained in his or her workflow can he or she easily adapt to other NLE programs used within the film industry. With multiple programs under his or her belt, he or she will be placed on a level above his or her competitors when entering the professional industry.

## REFERENCES

- Avid Complete Plug-in Bundle*. (2020). Retrieved March 25, 2020, from [https://shop.avid.com/ccrz\\_ProductDetails?viewState=DetailView&cartID=&sku=DYNAPA20005&isCSRFlow=true&portalUser=&store=&cclcl=en\\_US](https://shop.avid.com/ccrz_ProductDetails?viewState=DetailView&cartID=&sku=DYNAPA20005&isCSRFlow=true&portalUser=&store=&cclcl=en_US)
- Avid Technology Inc. (2001). Retrieved March 25, 2020, from <http://www.fundinguniverse.com/company-histories/avid-technology-inc-history/>
- Bové, C. (2017, May 15). Avid ScriptSync: An Editor's Secret Weapon. Retrieved April 02, 2020, from <https://www.provideocoalition.com/avid-scriptsync-editors-secret-weapon/>
- C. (2017, May 5). Celebrating 25 Years of Premiere Pro - Adobe Creative Cloud. Retrieved March 26, 2020, from <https://blogs.adobe.com/creativecloud/celebrating-25-years-of-premiere-pro/>
- Castle, B., Jr., Boden, T., Tilden, C., Cook, F., & McAllester, K. (2016). *Media Composer Fundamentals for Media Composer 2019.6 Software*. Burlington, MA: Avid Technology.
- Castle, B., Jr., Kemper, N., Hershelder, B., Tilden, C., Cook, F., & McAllester, K. (2016). Tracking and Blurring Objects. In *Media Composer Fundamentals* (pp. 291-300). Burlington, MA: Avid Technology.
- CPN Staff Published: May 5, 2. (2017, May 05). An Oral History of Adobe Premiere Software Evolution: The First 25 Years. Retrieved March 26, 2020, from <https://www.creativeplanetnetwork.com/news/oral-history-adobe-premiere-software-evolution-first-25-years-618356>
- Find assets in the Premiere Pro Project panel. (2017, October 23). Retrieved April 01, 2020, from <https://helpx.adobe.com/premiere-pro/using/finding-assets.html>
- Forde, S. (2016, October 16). Tracking and stabilization motion workflows in After Effects. Retrieved March 28, 2020, from <https://helpx.adobe.com/after-effects/using/tracking-stabilizing-motion-cs5.html>
- Gaille, B. (2017, April 05). Adobe Premiere vs Avid Media Composer. Retrieved March 26, 2020, from <https://brandongaille.com/adobe-premiere-vs-avid-media-composer/>
- Golibersuch, A., & Rubin, L. (2010, October 4). Benefits of JKL Editing. Retrieved March 27, 2020, from <https://community.avid.com/forums/t/89741.aspx>
- Hanby, J. (2017, August 28). Become a Workflow Master, Part 1: Before the Edit. Retrieved April 01, 2020, from <https://nofilmschool.com/2017/08/become-a-post-production-workflow-master-part-one>

- Hullfish, S. (2014). *Avid Uncut: Workflows, Tips, and Techniques from Hollywood Pros*. Burlington, MA: Focal Press.
- Jackling, N. S., Withers, S., & Livingston, B. R. (2009). Linear and non-linear editing - Adobe Premiere and QuickTime. Retrieved March 24, 2020, from <https://collections.museumvictoria.com.au/articles/2786>
- Keane, M. (2017, June 21). Adobe and Mettle VR: 360 degrees better. Retrieved March 26, 2020, from <https://theblog.adobe.com/the-latest-and-greatest-in-vr/>
- McAuliffe, K. P. (2018, July 23). Sorenson Squeeze reaches its End Of Life. Retrieved March 26, 2020, from <https://www.provideocoalition.com/sorenson-squeeze-end-of-life/>
- Organizing assets in the Premiere Pro Project panel. (2019, April 2). Retrieved April 01, 2020, from <https://helpx.adobe.com/premiere-pro/using/organizing-assets-project-panel.html>
- Peters, O. (2014, April 02). Why film editors love Avid Media Composer. Retrieved March 27, 2020, from <https://digitalfilms.wordpress.com/2014/04/02/why-film-editors-love-avid-media-composer/>
- R/editors - Trimming question - Avid vs. Premiere Pro. (2019, August 29). Retrieved March 27, 2020, from [https://www.reddit.com/r/editors/comments/cvjnjo/trimming\\_question\\_avid\\_vs\\_premiere\\_pro/](https://www.reddit.com/r/editors/comments/cvjnjo/trimming_question_avid_vs_premiere_pro/)
- Rostad, A. (2013, May 15). Video Editing: What are the qualities of a great editor? Retrieved March 26, 2020, from <https://www.quora.com/Video-Editing-What-are-the-qualities-of-a-great-editor>
- Salters, C. (2019, November 18). Chris Salters, Author at Frame.io Insider. Retrieved April 06, 2020, from <https://blog.frame.io/author/chrissalters/>
- Salters, C. (2019, August 26). Want to Work in Hollywood? Avid is the NLE to Learn. Retrieved March 27, 2020, from <https://blog.frame.io/2019/08/19/avid-in-hollywood/>
- Shain, R. (2017, March 08). Introduction to 360/VR Projects in Media Composer with Mocha VR. Retrieved April 01, 2020, from <http://www.avidblogs.com/introduction-360vr-projects-media-composer-mocha-vr/>
- Smith, C. (2019, November 10). American Graphics Institute. Retrieved March 25, 2020, from <https://www.agitraining.com/adobe/premiere-pro/classes/what-is-premiere-pro>
- Sorenson Media. (n.d.). Retrieved March 26, 2020, from <http://www.sorensonmedia.com/>
- Sysak, T. (2016, September 12). 4 Reasons to use Motion Tracking in Video. Retrieved March 28, 2020, from <https://learn.corel.com/blog/4-reasons-use-motion-tracking/>

- Till, C. (2015, August 18). How You Can Make Post-Production More Organized & Efficient. Retrieved April 01, 2020, from <http://clinttill.net/blog/2015/8/13/how-you-can-make-post-production-more-organized>
- Understanding Linear vs Non-linear Editing. (2013, December 16). Retrieved March 24, 2020, from <https://www.motionelements.com/blog/articles/understanding-linear-vs-non-linear-editing>
- V. (2020, January 23). The best video editing plugins. Retrieved March 26, 2020, from <https://www.videomaker.com/buyers-guide/getting-started-with-plugins>
- Video Solutions for Live & Post Production. (n.d.). Retrieved March 26, 2020, from <https://newbluefx.com/>
- Vinnie Hobbs. (n.d.). Retrieved March 26, 2020, from [https://www.imdb.com/name/nm5674184/awards?ref=nm\\_awd](https://www.imdb.com/name/nm5674184/awards?ref=nm_awd)
- Wei, S. (2015, February 4). Switch from Avid Media Composer to Premiere Pro. Retrieved April 01, 2020, from <https://helpx.adobe.com/premiere-pro/how-to/switch-from-avid-to-premiere.html>
- Working in the Project panel. (2019, December 4). Retrieved April 02, 2020, from <https://helpx.adobe.com/premiere-pro/using/customizing-project-panel.html>
- Work with immersive VR video. (2017, July 25). Retrieved April 02, 2020, from <https://helpx.adobe.com/premiere-pro/kb/work-with-vr.html>