

A/V Technology – Through the Years

It's nearly impossible to imagine our culture without movies, television, and the concert sound and lighting experiences we enjoy today. Our group entertainment and educational experiences with audio and visual art are inseparable from the technologies that produce and present them. It's hard to believe that only a century ago the state of the art was significantly different. In fact, only a half-century ago, the types of sound systems, visual effects and projections we take for granted today were virtually nonexistent. To get an informed perspective on the professional field of audiovisual technology and communications, this introductory course will start at the beginning. We'll take a look back at the groundbreaking advances in audio and visual arts technologies. The evolution of equipment, processes, design, and subsequent career development is nothing short of amazing. This is great news for you as there's no indication that technological innovation will slow down.

Communication processes and careers have advanced significantly since their introduction. Early film technology could only produce black and white movies. A few were hand-tinted, frame-by-frame, by a skilled artist called a colorist. These colorists would transform black and white images to look like real life on film. A frame is a single image from film or video, and when all the frames move consecutively at 24 frames per second, they create the perception of motion. Thus, the colorist process was laborious and expensive. The silent films of the 1920s were improved in the 1930s and 40s following the introduction of the microphone, which had a profound effect on film and later, television. Recording techniques of music studios using early condenser microphones produced a scratchy background sound that distracted viewers from the action taking place in the film. With the introduction of television, limited, live on-air, two-camera television shows of the 1950s were broadcast in black and white but did not allow for much movement before those on camera were "off stage." It wasn't until 1939 that a full-length color film made it to the box office, and color TV was still another two decades away. These artistic production areas are part of the audiovisual communication revolution. In the scope of this course, we will also look at other communication fields and professions, including telecommunications. All of these fields require technicians and innovators to make the communication happen: a technician being a person with technical skills specific to equipment and operations, very important in this field.

As someone interested in a career in this exciting, wide-spectrum field, you may already be on the A/V team at a school or center, or be a sound engineer for a band or a small theater. The anonymous technician changing film reels in the projection room of the local movie theater is an outdated but classic image of the profession. These days the technicians are in the studios making the video, programming the audio accompaniment, and designing the equipment that will display the latest films. Whether you consider career positions such as the A/V guru for college classrooms or lecture halls, the sound engineer at a club, a DJ at a wedding, the lighting designer for a major production, or the inventor of the next phase of computer graphic imagery software or digital sound recording, there is no end in sight for the growth of audiovisual technicians.

Today's communication workers are already developing skills for tomorrow's technology. Because of this, the communications industry is constantly seeking talented and skilled employees to fill media positions in art, film, and television, as well as broadcast and print journalism. This course will provide an overview of the communications industry and explore the various career paths that you can take to work in today's media.

Objectives

- Describe the impact of changing technology on the audio/video and film industries.
- Discuss the evolution of audio/video production.
- Identify pioneers in film and sound.

Vocabulary

audiovisual	any technology involving components of both sound and images, even though the image or images may not move
colorist	in early film, an artist trained to apply life-like color to black and white images captured on film; today, an artist who works to integrate the various colors on a film for continuity during editing
frame	a single image from film or video. When many are added together and displayed at 24 frames per second, they create the perception of motion
newsreels	short movies about current events around the world, usually shown prior to the main feature in movie theaters in the 1930s, 1940s, and 1950s
technician	a person with technical skills specific to equipment and operations
test patterns	TV signals designed so TV set owners could adjust their own sets for the best sound and picture reception

History of Audio/Video Technology

The term audiovisual refers to the combined presentation of audio content and projected visuals. The visual images may or may not change, but to be truly audiovisual, both components are involved. The history of audiovisual technology can be seen in the evolution of film, sound technology, and television.

You might have heard the name Thomas Edison, best known for inventing the light bulb and modern electric lighting systems. Did you know that Edison also invented equipment and innovations for moving pictures, also known as films, during the 1890s? The first movie camera capable of taking panning shots by rotating was developed by Robert W. Paul, in 1897. It's remarkable to consider these early days of filmmaking in contrast to today's world-wide industry. Film became popular immediately, and the reason for that is worth some discussion. What is it that we love so much about watching lifelike or fantastic stories on a screen? The ability to bring narratives to life with action was instantly riveting. Even without sound, audiences engaged with film on an emotional level. Dialogue was mouthed and important pieces of dialog were displayed as text during breaks in the action. Live piano or organ accompaniment was provided in theaters to enhance the experience. This musical accompaniment would later become an intrinsic part of film, the soundtrack. Audiences who were used to live music in the theater during plays, musicals, and opera wanted that same feature to help enhance and interpret the dramatic action in films. As the technology advanced, live actors, singers, and musicians were brought into studios and recorded for incorporation into the film movie and the film industry was born. The first movie theater, the Nickelodeon in Pittsburgh, opened in 1905, and was the first theater to succeed in showing only films and no live shows.

Five years later, newsreels began to gain popularity. They were short movies about current events around the world, usually shown prior to the main feature in movie theaters in the 1930s, 1940s, and 1950s. Thus, audiences could receive both entertainment and the latest news in the theater. Both presentations were black and white, and both were silent. Think about how this early transformation of news to dramatic presentation relates to what we view today. The precedent for combining

entertainment with news has a long history, with town criers and paper sellers calling out the headlines on street corners. Early news reports were periodic, big production film events with text but no sound.

Audiovisual for the Home - TV

Although a Russian scientist, Constantin Perskyi, first used the term “television” in 1900, it was several decades before the technology had developed enough to broadcast TV into every home. Early TV station sign-off test patterns were designed to allow set owners to adjust their TV sets for the best sound and picture reception. These geometric patterns helped viewers select the best focus available with their television dials and antenna positioning by adjusting the horizontal and vertical parameters of the image. Test patterns were also used to fill station monitors during the many hours of no programming, typically after 10 or 11pm and before 6am. The Indian Head Test pattern was one of those commonly used. An audio tone was also generated to assist in the adjustment of audio controls. The test pattern tone also served to wake up viewers who had fallen asleep watching “late night” TV

It wasn't until World War II that the TV stations thought to interrupt a live broadcast with breaking news. Today, breaking news scrolls across the bottom of TV screens, pops up on Internet web pages and these events are reported live from the scene, as they happen, anywhere in the world. More and more newscasts depend on amateur video captured on cell phones by witnesses rather than journalists. And, with digital film production, animation, and editing, you can create films about people and events that never actually existed in the real world!

Notebook

Do you have a favorite silent film? There are some spectacular examples, such as Metropolis from 1927, or any of several excellent films by Charlie Chaplin. List one or more of those you know, and refresh your memory with a viewing during your study of this lesson. You may not have thought about the technological aspects of the movie.

How audio/video technology is changing today's media

Audiovisual materials can be found everywhere: in schools, businesses, homes, stores, doctors' offices, and on the Internet. Schools have increased their use of audiovisual materials for educational instruction, in every subject. Many schools use interactive whiteboards and audiovisual learning through online interconnectivity. Online learning is also used extensively at college and adult learning levels. Businesses use audiovisual conferencing for meetings and client presentations. Improved audiovisual technology enables interactive meetings and worldwide collaboration in real time. Audiovisual online content is omnipresent.

Improved technologies are changing the entertainment experience. In addition to being able to stream television shows on the internet, new audiovisual technologies present special features to DVD viewers and 3D theater experiences. New restoration techniques are helping return old recordings and films to their original quality, and preserving them for generations to come.

Audiovisual technology has become an important part of how the world interacts. Interactivity demands audiovisual content, and that means the employment of technicians at every step of production and presentation. What does the future of technology look like for film, television, and sound performance? Could the pioneers of motion picture cameras foresee digital photography and computer generated special effects? It's an exciting field and one that never stops evolving.

Let's Review!

In this lesson you have learned:

- motion picture and sound technologies were developed in the late 19th century and extended in the early decades of the 20th century;
- constant technological innovation changes equipment, techniques, and personnel involved;
- digital filmmaking is quickly becoming the norm.;
- cameras are now used everywhere; and
- A/V technicians are involved in the production, transmission, and presentation of a wide spectrum of content and applications.