

## Art and Technology: Graphic art

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**Abstract:** The emergence of technologies has led to advancement in art production. Over the years, the field of art has witnessed a great transformation as a result of technology. Technology has redefined the art field in terms of art materials, medium and means of production thereby giving art a different dimension. Contemporary art practices are far appreciated now than before as a result of the fusion of technology. Graphic art practices have changed rapidly from what it used to be before early 19<sup>th</sup> century. There are technologies that have been used by graphic artists in creating suitable designs for the general public consumption. The areas of photography, printing, advertisement, branding, product design, packaging and publishing have better experiences by the public due to technological advancements through the creation graphic tools and medium totally different from the traditional means of graphics that are becoming obsolete. The use of technology in graphic art is inevitable. Graphic designers approach their creative dexterity by exploring available technologies in the execution of their works. How technology impacts their creative ingenuity is what this paper attempts to address. This paper also investigates the relationship between art and technology in graphic art practice taking into cognizance their advantages and disadvantages.

### I. Introduction

Over the years, the field of art has witnessed a great transformation as a result of technology. Technology has redefined the art field in terms of art materials, medium and means of production thereby giving art a different dimension.

Technology is aggressively changing the way art is created and enjoyed. Artists have developed sophisticated means to make art enjoyable and they are doing it with remarkable ease and frequency due to new technologies. As a result of this evolving technological world, graphic artists are adapting to the new technologies and exploring them for the creation of arts that meets the taste of the yarning populace especially in digital art. Some are merging these new technologies with traditional media raising the bar for more art appreciation in recent times.

Graphic art practices have changed rapidly from what it used to be before early 19<sup>th</sup> century. There are technologies that have been used by graphic artists in creating suitable designs for the general public consumption. The areas of photography, printing, advertisement, branding, product design, packaging and publishing have better experiences by the public due to technological advancements through the creation graphic tools and medium totally different from the traditional means of graphics that are becoming obsolete.

In as much as technology has impacted in graphic art practices, technology cannot be separated from art. Art gives a foundational base for technology to strive. Technologists engage in innovations and inventions through art experiments before arriving at the end result- devices. On the other hand, art practices are now dependent on technology to be given more appreciation. Therefore, it is worthy to say art and technology are two inseparable terms that have changed the world.

From the premises above, this paper attempts to bring to bear the relationship between art and technology and its impact in graphic art practices. To achieve this, definitions and etymological background, historical background of art and technology, technological advancements in graphic art practices and the future of technology in graphic art practices will be discussed.

## **II. DEFINITION, ETYMOLOGY AND HISTORICAL BACKGROUND OF ART**

Studies in the art field indicate that there is no one generally accepted definition of art. Definitions are provided as it suits the researcher. But one peculiar thing is the features or characteristics that constitute a thing to be considered art. This is to say that, art and is defined according to the context of study. In this context, art will be defined in view of the study. Few definitions from authors and scholars will be considered.

Art generally has no definite definition. Its definition is subject to different interpretations because of its nature, structure and situations. The word art encompasses so many things. Recent sense of the word art can refer to several things; a study of creative skill, a process of using the creative skill, a product of the creative skill, or the experience with the creative skill. Art therefore connotes a creative process that leads to the creation of an art piece that can meet the acceptability of the audience.

According to Enamhe (2007), art is a visual language whose statement records man's response to a multiplicity of environmental stimuli. Such stimuli can be social, political, cultural or even religious in a closed or open society. This definition revealed that art is a visual language that is used to communicate man's responses to the things or phenomenon that abounds in the society. For instance, art can be used to communicate societal ills through any visual form.

In the same vein, Lazarri and Schleiser (2008) considered art as strictly human phenomenon. It is a human phenomenon in the sense that art expresses the activities of human race. Art is human activities and the product of those activities. It is a diverse range of human activities that leads to the creation of images or objects in fields of visual arts including painting, sculpture, print making, photography and other visual media.

The Irish art encyclopedia defines art as a creation. Art is created when an artist creates a beautiful object, or produces a stimulating experience that is considered by his audience to have artistic merit. With this definition, one could conclude that art is the process that leads to a product which is then examined and analyzed by experts or simply enjoyed by those who appreciate it.

According to Encarta Dictionary, art is the creation of beautiful or thought provoking works produced through creative activity such as painting, music or writing. It further defined art as the creation of objects or things by human endeavour rather by nature. The definition connote that art is manmade creative effort.

The Wikipedia free Encyclopedia dictionary defined art as the product or process of deliberately arranging items in a way that influences and affects one or more of the senses, emotions and intellect. This means that art is a deliberate activity conducted by man which can appeal to man's emotions and responses. In addition to the above, the Lexicon Webster's Dictionary of English Language sees art as the use of imagination to make things of aesthetic significance. This significance can be appreciated by sights both internally or externally.

The Oxford Dictionary consider art as the expression or application of human creative skill and imagination, typically in a visual form such as painting, sculpture, producing works to be appreciated primarily for their beauty or emotional power. It further defined art as a creative activity resulting in the production of paintings, drawings, or sculpture.

From the definitions above, art can be seen as a product of human creative activities and the product of those activities which are expressed through a medium and technique that have visual and emotional impact. Therefore, art is art when it is manmade.

### **III. Etymology and Historical background of Art**

All over, the word art is said to have its etymological root from a Greek word, “ars” meaning art, skill or craft. It refers to quality of or expressions of what is beautiful or of great significance. Art is also traced closely to Latin word meaning, which roughly translates to “skills: or “craft” as associated with words such as “artisan”. English word derived from this meaning include artifact, artificial, artifice.

Records have it that history of art is often told as a chronology of masterpieces created in each civilization. The very concept of the origin of art begins with humanity since humans are by nature artists. Humans in their artistic impulses and achievements express their vitality, ability to establish a beneficial and positive relationship with their environment, to humanize nature gave birth to art. By the virtue of this foregoing statement, it is convenient to explicitly state that art is as old as human creation. In the events of man trying to develop and create a better environment and livelihood ventured in the creation of art.

According to the art encyclopedia Britannica, in the perspective of the history of art, artistic works have existed for almost as long as humankind: from the early pre-historic art to contemporary art. Mathew and Hubert (2012) maintain that the oldest forms of art are visual arts, which include creation of images or objects in visual media. Perhaps this is the most reason why these arts were studied chronologically to give a historical backing to art.

In another development, art historians believe that art began with the prehistoric men sometimes regarded as the Paleolithic or cavemen. They engaged in the art of drawing, painting, engraving, printmaking and sculpture. As much as art in the prehistoric time seems preliterate, there are evidences of great and sophisticated craftsmanship. In attempts to make life meaningful and convenient, the Paleolithic men ventured into the creation of tools for hunting and subsequently for agricultural purposes. In their attempts, they created art pieces that demonstrate their creative ability inform of weapons, farming tools and utensils.

Dayo (2002) lend credence to the above submission when he noted that prehistoric art began with hunting and gathering. The prehistoric men were mainly hunters and wanderers who moved from one place to another in search of food. Their resting places were caves. The earliest forms of prehistoric art are extremely primitive. This is to say that as mainly hunters by that time, combating wild animals that attacked them and their homes believed that the spirit of the living animals could be captured by drawing and painting, this is the reason to why they began drawing and painting the animals on the walls of the caves and casting spells on them (Dayo, 2002).

The encyclopedia of stone age art (as retrieved) expanded the history of art to include the upper Paleolithic period were man was able to penetrate other means by producing tools made out of flakes, carved stone, woods and bones. It also witnessed the magical ceremonial rites connected with the increase of desirable and the disappearance of wild animals and with the successful conclusion of hunting expeditions.

The period that witnessed the production of the earliest works of art and engage in religious and spiritual behavior such as burial rites and rituals is the middle Paleolithic (Mc Clellan, 2006). Conard (1992) contributed by saying that the middle Paleolithic witnessed the assemblage characterized by the predominance of tools. It is a period that also brought about development of advanced cultural traits, humans also first began to take apart in long distance trade between groups for commodities (Sean, 2008).

However, modern art is a shift from art practiced before the late 18-21<sup>st</sup> century. It is otherwise regarded as contemporary art. It is so regarded because it connotes arts that are practiced in present times. Artists belonging to the modern period made attempts to distort art from what it seems from the prehistoric perspective. Anything could be regarded as art in modern times so long as it meets the criteria to be considered art.

#### **IV. DEFINITION, ETYMOLOGY AND HISTORICAL BACKGROUND OF TECHNOLOGY**

The word technology is derived from a Greek word “*tekhologia*” which means systematic treatment. The term according to the online edu.com comes from two Greek words, transliterated *techne* and *logos*. *Techne* means art, skill, craft, or the way by which a thing is gained. *Logos* means word, the utterance by which inward thought is expressed, a saying, or an expression. So, literally, technology has come to mean something different. From the etymological definition, technology simply means the art, craft and skills in which something is done. It can also mean the techniques of creating something.

However, just like art, technology has no universally accepted definition. But one common aspect of the definition of technology is the involvement of skills and techniques in the production or creation of things for the purpose of convenience. Just like its root meaning, it can be described as skill in carrying out a work. It could also be considered as a systematic knowledge and the application of such knowledge in carrying out a task.

The above statement conforms to the definition of the online Merriam Webster dictionary (2020) that defines technology as the application of knowledge especially in a particular area; a capability given by the practical application of knowledge. It further explains technology as a manner of accomplishing a task especially using a technical processes, methods, or knowledge. It could also be considered as the specialized aspects of a particular field of endeavour.

From the definition, one could conclude that technology has to do with the manner at which a task is completed through systematic processes or steps in a particular field. Take for instance; the processes that would lead to the fabrication of a heat transfer machine for the purpose of transferring prints on surfaces, especially fabrics, can be regarded as technology. From the assemblage of parts, to fixing, circuit connections and powering – printing on surfaces of fabrics is considered as the organized processes to leads to the transferring of designs on fabric-technology.

Technology can also be described as a body of organized knowledge and the products of such knowledge applied in the creation of objects, machines, or any tangible for the purpose of making life easy for humankind. In support of this, the Oxford dictionary defined technology as the application of scientific knowledge for practical purposes, especially in industry also as machinery and devices developed from scientific knowledge.

In recent times, technologies have been seen to be invention of machines that help perform tasks. This, Arnulf Griiber (1998) sees technology to consist of manufactured objects like tools (axes, arrowheads, and their modern equivalents) and containers (buildings etc). Their purpose is to enhance human capacities. This is not to say that technology is restricted to these aspects. It expands beyond these aforementioned to include machines produced to help humans perform tasks effectively and efficiently.

There has been consistent debate that technology is the end product of innovation. This claim is debunked by Chris Fabian in Gould (2015) that technology is not the end product of innovation, but a driver of new ways of thinking about development problems. Through technology, new ways of thinking towards solving of problems are developed to solve developing problems.

However, to trace the origin of technology is a herculean task. For technology just like art is as old as human creation. The early men developed means and devices to tackle their challenges in the areas of hunting, agriculture and life endeavours. The early man invented tools for agriculture and warfare- bows and arrow, flakes, stones for sharpening of weapons were all products of thinking and produced to solve the emerging problems that confronted their daily life activities.

Few records proved that the history of technology deals with the invention of tools and creative techniques. This Nasir (2018) posit that the history of technology is the history of invention of tools and techniques and is similar to the other sides of history. Nasir maintained that the term technology was first used to describe the advancement and change around us. It began with the beginning of life on earth, and goes until modern technologies, such as computer and nuclear power (Nasir, 2018). To Nasir, the era of technology started when wheel was invented which is one of the most important technology and after it, more and more things were invented.

Studies reiterate that the industrial revolution gave rise to technological advancements. New inventions and technology played important roles in the industrial revolution. They changed the way things were powered, how goods were manufactured, how people communicated and so on. These new developments allowed the industrial revolution to grow rapidly and spread all over. In modern times more new advanced technologies are in place to help humans perform tasks in almost of fields of human endeavour- engineering, sciences and the arts.

## **V. ART AND TECHNOLOGY: AN OVERVIEW**

Art and technology is a blissful union that cannot be separated. They both play a complementary role in the development of almost every aspect of life. Technologists and artists depend on each other to survive; by producing technologies that will help solve the problems encountered by humans in the day to day activities.

The widewall editorial asserts that both art and technology define and continue to reshape the world we live in. technologies are now used by artists to investigate art making drifting away from a conventional and traditional ways of executing art. New media are now merged with traditional media to create art without distorting or distorting the purpose of such creation. Technology provides platforms for artists to create new medium for art using existing or new technologies. Industrial or social technologies are explored by creative artists as new tools or ideas that lead to the production new artistic invention.

It is no doubt that over the years visual artists have as a result of technological advancements made tremendous efforts in redefining their art practices. Through these advancements, they are able to express new meanings, ideas and concepts that are interesting to the audience and this has significantly improved the level of patronage of art.

One significant relationship between art and technology is that both tend to create. From their etymology, both words reflect the activity of creation. They bring to being what has not being. This is to say, literally that art and technology produces something that is aesthetically appealing or valuable and can be appreciated for their contribution to solving problems.

The relationship between art and technology may not be linear but both are interrelated and inter-dependent. They both interact in the creation of things. Both art and technology shares elements and practices that is compactable for each other. For instance, to produce a print machine (technology), the art of designing the concept comes into play (art). It is convenient to therefore state that both terms need to be applied in the creation of objects.

The healthy relationship of art and technology has grossly enhanced and change the perception of art practices in recent times. The use of technology is now seen in almost all the fields of art of painting, sculpture, textile, ceramics and graphics. Visual artist realizing the power of technology are changing their concepts and producing works of art that are having wider audience and acceptability.

## **VI. TECHNOLOGICAL ADVANCEMENTS IN GRAPHIC ART**

Graphic art deals basically with communication. It is an aspect of visual arts that is dedicated to communication using various medium of advertising such as posters, flyers, prints media sometimes combining audio and visual. It is an ancient practice that traces its origin to early practices by the Paleolithic men.

There is no stipulated meaning for graphic design. In its broadest sense, it is the production of visual statements (Margolin, 1989). Lending his voice, Meggs (1998) stated that the origin of graphic design began with the cave paintings of the pre-historic era during the early Paleolithic to Neolithic period (35,000 B.C to 4000 B.C), where early African and Europeans left paintings in caves including the Lascaux caves in Southern France and the Altamira in Spain. Black was made from charcoal and a range of warm tones, light yellows and reddish browns from iron oxides, which were mixed with fat as medium. Images of animals were drawn and painted on walls with the fingers by pre-historic men and women, which was done for survival and a depiction of their existence and culture. Meggs points out that Cave painting was not the beginning of art as we know it, but rather the drawing of visual communications because these early pictures were made for survival, utilitarian and ritualistic purposes. This is to affirm that graphic art gave rise to other forms of art as we know them today.

On the contrary, Hollis (1994) dates the derivation of graphic art to the evolving of art posters and printing technologies in the late 1900s, eliminating the era of caves as support but rather when paper was introduced. The celebrated designer Milton Glaser (Helfand, 2001) posits that in contemporary culture, graphic art is the generic term for the multidisciplinary practice of combining typography, images and some combination of media for the purpose of informing, instructing, educating or persuading a given audience. These graphic designers both conceive of such methods of persuasion and, to varying degrees, execute them. As emissaries of communication, graphic designers visualize solutions for the presentation of abstract data, turning ideas into innovative and communicative material for the benefit of society: They create books and magazines, posters and packaging, exhibitions and websites, logos and film titles.

Kalman and Jacobs (1993) give a definition of graphic art in a very broad scope, stating that it “is a medium...a means of communication consisting of the use of words and images on more or less everything, more or less everywhere”. Graphic design is basically defined as a form of visual communication (Hollis, 1994). By this sense, graphic art engages media through a visual means in order to communicate to the public. Information is thus decentralized through the use of images and text and not solely by sound; this is because modern trends of graphic design have witnessed the inculcation of sound alongside the use of images and text in motion, often called motion graphics. Most often sound and visual communication is concurrent in modern graphic design so the term “visual” communication is arguable. According to Lester, graphic design is “the art and craft of bringing organized structure to a group of diverse elements; both verbal and visual...it has expanded to include the use of words, pictures, and even sounds in motion pictures, on TV, and through computers” (Lester 2000).

In summary, graphic design or art is can be described as communication design/art; is a skill that focuses on interpreting the message visually. It can be physical, digital or anywhere in between. It is an art of achieving certain objectives with the use of images, symbols or even with words. It helps in communicating visually and expressing the concepts and ideas aesthetically, using various graphic elements and tools.

## **VII. TECHNOLOGICAL ADVANCEMENTS**

Graphic art has witnessed a great deal of advancement. As a means of communication, graphic art has changed with time due to the ample opportunities provided by technology. The graphic art has continued to grow in terms of tools, techniques and products. It has shifted from almost all the traditional means to digital art. As a result of this, artists have also changed, and adapt to the trending technologies in order to meet up the challenges associated with communication.

With the advent of technology, graphic artists now have variety of concepts and tools to aid in carrying out their designs. Quality of graphics has improved overtime due to the influx of technological tools and devices such as computer and this also has improved the larger scale, greater visual impact and makes communication more easy and convenient. According to Monica Eaton-Cardone (2000), the use of technology such as computers allows graphic artists to implement more colours, intricate designs and higher resolutions. She further stated that as technology has advanced, the quality of the graphics has improved. Lines have become sharper, colours more vibrant and designs are crisper-making it feel as though the elements were jumping off the monitor, page or sign. With technology, powerful tools are now in the hands of the graphic designers which have resulted in hundreds of methods and programs to choose from, translating into thousands of styles and techniques, all of astounding quality (Monica Eaton-Cardone).

Nevertheless, Monica stated that software allows images to be stretched, made transparent, layered over text and combined with other elements to create montages of all varieties. This is as true as over the years as a practicing graphic designer, I have been able to manipulate with pictures/images using computer softwares such as Photoshop, Corel draw, illustrator to edit, change and enhance image quality. Technology has provided avenues for drawings using tools that can give an exact representation or prototype of concept making it bolder and more attention grabbing.

Technology has made graphic art easier and accessible to clients. Prior before the inventions of modern graphic devices such as smart phones, tablets and larger screen monitors, graphic design takes a longer time to be executed. Take for instance, publishing of books takes long times to come out in printed format, but with larger printers, it can take few hours to execute publishing jobs that could ordinarily take months. Creating layouts used to be a serious and time consuming but with the introduction of some softwares, layouts are at the tips of the designers.

Bailey (2007) posits that technology has predominantly changed the ways graphic designers create works in the graphic field. Since the digital revolution, graphics have seen a massive change in the way that, for example, motion graphics is created. Programs such as 'Adobe After Effects' have increased productivity in the motion industry as it allows designers to create animations in an extremely short amount of time compared to when they were traditionally analogue created. An example of this are the classic Disney animations such as Snow White and the Seven Dwarfs, Beauty and the Beast or The Lion King, all of which were created using traditional stocks cell animation.

In graphic art and design today, the creative world industry is actively concerned with the quality of works that are pushed to the society. To achieve this and be in tune with the society's demand, several technologies have been invented to help the graphic artist to make his work more appreciated. Of the many novel technologies, graphic techniques such as printmaking, photography, animation, packaging/branding, advertising and editorial/publishing has improved. We shall take a look at these areas and how technology has affected them with their merits and demerits.

### **VIII. Printmaking and modern technologies**

Printmaking is a graphic art that spanned through the ages. It began with the Paleolithic men when they were using their palm to paint on the walls of the caves. Printmaking is an art that imprints images on a surface. It involves making images or designs by printing them with ink on unlinked surfaces such as paper, fabric, wood and plastic. Printmaking span so many years with traceable history to prehistoric period where palm and foot prints proved that prints can be made from an original surface to another. Records reveal that printmaking began as an engraving, found on bones, stones and cave walls. They were in form of inscriptions or impressions usually made on bones and rolled on clay surfaces.

According to Eyitayo (2019) printmaking is an art form that produces text, images or illustrations on paper, fabric, parchment, metal, plastics, or any other supports, by different techniques (which include woodcut, linocut, screen printing, and photo stenciling), directly by the printmaker. Eyitayo says that scholars describes print as an image or design made, and taken by pressure from the inked surface of a woodblock or lithographic stone, or from lines engraved or etched in a metal plate and other suitable medium, which can print hundreds of identical copies (Chilvers, 2004). Printmaking is all about making prints from an original form specifically for the purpose of mass production.

Printmaking in the words of Eyitayo could be traced back to prehistoric age, while the first print to be observed by man was believed to have been his own foot-print and those of the animals he hunted. This realization might have inspired the art of using different available materials. In a similar development, Urton (2014) description of man's initial attempt of making prints shows that the prehistoric man practically placed his hand on the walls of caves and blew pulverized colouring substance such as earth mud, plant pigment, animal dungs on it, thus making prints.



Prehistoric human finger print on the wall of the cave

In Nigeria, printmaking began some 30years back. Filani (2004) stated that all human communities in ancient times manifest printmaking exercises in one way or the other. He exemplifies this claim when he made references to the crafts of calabash carving, wood carving and blacksmithing that shares impressions in form of

incising and cutting, that these techniques are evidence of printmaking. Another instance is the *Adire Eleko*, a technique of textile art that involves serigraphic skills in application of starch resist dyeing technique. The conclusion therefore is that, printmaking origin in Nigeria is conveniently traced to the traditional crafts that abound in Nigeria's communities.

However, Nigeria's scholars like Bruce Onabrekpeya have taken printmaking to a different dimension with their creative techniques (technology); couple with the invention of modern technologies such as printing press, mass productions of prints has been made very easy. One important factor in selecting printing technology nowadays is the desire to create archival quality work. Using the computer as a tool, rather than solely as a means to view digital images, a variety of steps are done to transfer digital images to paper. Wide varieties of printers allow for and create an even wider variety of prints. However with computer, prints from manual methods can be transferred to the computer, edited with multilayer colours and given better quality.



Linocut Print

With printing technologies like the inkjet printers, it is more convenient and appropriate to work and achieve better results. Lithographs images, silkscreen printings are now having high resolution with inventions of safer materials such solvent used for photo coatings. This Pogue (2009) assert that safer solvent, thermal laser imaged lithography plates which is a traditional method has been eliminated as they are hazardous in terms of waste streams operation. New, sustainable, plant-based compounds have been adopted in the paint and coating industries as alternatives to the traditional petroleum-based solvents.



Injet Large Printers



Heat transfer Machine

Technological advancement has provided for some digital printmaking. Common technologies used to produce digital prints include inkjet, electro photography (dry toner and liquid toner), thermal transfer (mass transfer and dye sublimation transfer), and laser imaging (digital photo printing) on photographic paper. Inkjet is a popular technology based upon the ejection of small drops of fluid by an actuator that is controlled by a digital computer system. This has replaced the traditional method of transfer of images from a matrix to a surface. Thermal on the other hand uses heat to transfer images to surfaces.

### **IX. Advantages of new technologies in printmaking**

Not only has new technologies in printmaking as an art made printing easy, but it has changed the dynamics and improved the quality of prints made by a printmaker. Some of the few advantages of these new techniques are;

- i. The new technologies reduced costs of production especially with new digital printing techniques. The traditional methods are cost effective s materials like linoleum, stones, lithographic matrix or plates are expensive to obtain.
- ii. New technologies in printing making guarantee for speed and accuracy. The new printing machines like the inkjet printers are speedy as compared to the traditional methods that are time consuming such as linocut, etching and engraving. Therefore, with the simplified and reduced steps in digital printing, prints can be produced faster.
- iii. New technologies deliver superior quality. With inkjet printers, the printmaker is assured of quality prints as a result of the vibrant and scribed colours.
- iv. With new technologies, ease of use and reliability is guaranteed as compared to the traditional methods. Example the offset and letterset printing methods.
- v. It has enhanced and streamlines workflow thereby reducing human labour.

### **Disadvantages of new technologies in printmaking**

- i. As much as the new techniques in digital printmaking has comparative advantage over the traditional methods, it very expensive. The equipment and materials are expensive and can cost a fortune to purchase.
- ii. Harmful emission of toxic waste from machines can be dangerous to the human health as a result of the particles and some hazardous volatile organic compounds during printing.
- iii. Some new technologies are not user friendly therefore posing challenges in terms of usage.
- iv. New technologies consumes high energy; mechanically and electrically.

### **X. Photography and modern technologies**

Although there have been conscientious efforts by scholars to agree to the fact that photography is a form of visual art. I agree totally that as much as photography requires skills and creative imagination in documenting words and events through photographs, it is an art. But then let us look at some key definitions that see photography as an art form.

Photography is the art, application and practice of creating durable images by recording light, either electronically by means of an image sensor, or chemically by means of a light-sensitive material such as photographic film (Spencer, 1973). It is clear from Spencer's definition that photography is an art that applies through the practice of creating images by light. By the definition of art as the creation of objects or images through visual means, photography perfectly fits into being described as an art form since it involves the creation of images using light with the use of camera.

The Merriam Webster dictionary sees photography as the art or process of producing images by the action of radiant energy and especially light on a sensitive surface such as film or an optical sensor. Here, photography is also considered as art that involve itself with the creation of images through light.

However, photography in art concerns itself with the creative production of images differently from the conventional practice such as photojournalism. McDarrah (1999) gave a simplified definition of photography in art as creation of images that are done as fine art- that are, done to express the artist's perceptions and emotions and to share them with others. In the same vein, Hope (2003) considers photography in art as picture that is produced for sale or display rather than one that is produced in response to a commercial commission.

Photography in art therefore aims not just on capturing and producing images, it aims at creating something worth more than realistic rendering of the subject; it conveys personal expression. With the advent of modern technologies, photography in art can be viewed in a different manner and approach. Apart from using cameras, there are new means of producing photographs much better than the early ones-from analogue cameras with the use of films.

Technology has improved photography practice. Before now, pictures or photographs were produced as still photographs, with advancement in technology; cameras can shoot and record videos as well as do many other functions. Cameras now have video capabilities which can record up to 1080p HD videos (Wikipedia).

Photographic cameras now have the Global Positioning System (GPS) in them that allows camera to capture and record images indicating the location and time of such capture. With the advent of Wi-fi ready devices, photographs can be viewed without necessarily printing them out for the viewers. Also, with computer aided designs (CAD) photographs can be worked on using computer applications such as Photoshop, to edit and add colours to the photographs to make them look more beautiful.



Digital Camera

Modern technological devices such as smart phones and apple phones (iPhones), people and artists alike are using these devices to capture or take photographs and using the features to create amazing photographs. The devices allow for editing of backgrounds, adjust and strengthen the images. These devices also allow for e-printing with the use of USB cables.

Digital technology has changed the role of photography in recent times. With digital cameras photographs can be captured anywhere and anytime. They can be captured and shared as text messages, email messages, as portable document (PDF) to another person. There are soft wares which enable for the creating and editing of photographs and give them a reality concept. In the Photojournalism field, this modern advancement allows the journalist to create photographs and quickly break them as news without going to the photographic studio to edit which is time consuming.



Photo Montage

#### **Advantages of new technologies in photography**

- i. New technologies in photography such as digital photography have increase photographer's flexibility and time management through photo editing.
- ii. Easy to capture large backgrounds and images
- iii. With modern cameras, it reduces the uncertainty that usually comes with the mechanical processes of producing images- films. No more exposure of the films and use of chemicals.
- iv. Quality of images have been improved with modern technology such as modern 3D cameras
- v. With modern technological advancement in photography, there is guarantee for instantaneous satisfaction-the sheer immediacy is better than the traditional film photography.
- vi. Mass storage for images as compared to the film rolls where there is no adequate space since it film. With memory cards and hard drive devices, images can be stored and transferred to save space.

#### **Disadvantages of new technologies in photography**

- i. Modern technologies in photography practice are very expensive. Not many can afford such luxury to possess one.
- ii. Provision of software has reduced if not replace talent and creativity.
- iii. Technical knowledge is often required in the handling of digital cameras and devices in modern photography.
- iv. Malfunctioning of the modern devices can lead to loss of all images.
- v. The new technologies are not permanent. As trends continue to change, so do the technology. They are not built to last, but rather to be replaced after a few years.
- vi. New technological devices are fragile as compared to old devices.

### **XI. Motion graphic design and modern technologies**

According to Kierzkowski, McQuade and Zeisser (1996) technological advance with its accelerating pace has brought changes in design because the demand for graphic design on television, the internet, video games, interfaces for electronic devices, and posters on cheap screens and interactive posters is more and more dominant. This is to say that with technological advancement, graphic design has taken a new dimension that address certain problems and solve them using the new technologies in order to meet up demands in design. One of the much advancement is motion graphics. Motion graphics usually deals with the application of motion to still designs or concepts. Motion graphics nearly always contains video, film, animation, photography,

illustration, typography and music. They can be described as multimedia graphics- containing sounds, light and movement.

The term “motion graphics” was first posed by John Withney, the well-known animator, in 1960. Saul Bass was the first one who outstandingly took advantage of motion graphics in his works (Yu, Li, 2008). Motion graphics or moving graphics is created by video or animation technology and also by making a hallucination of movement or changing the appearance of visual factors. When utilized in multimedia projects, motion graphics is usually accompanied by sound. This type of graphics usually appears in electronic media.

Mohsen (2014) maintains that motion graphics as a method of expression and communication with the audience has unique themes and domains in utilizing innovation, imagination and graphic effects. In fact, motion graphics is a context for displaying where performance and image are considered as expression elements in the creation of the work.

Motion graphics have been existence for some decades and has also witnessed technological advancement. Computer programs has become powerful and more widely available and been used by graphic designers or motion graphics experts to produce motion or animated designs. Computer programs such as Adobe After Effects, which allows the user to create and modify graphics over time. With this software, it is easy to convey concepts and designs with motion and make the viewers have a sense of 3D effect and making viewing lively too.

#### **Advantages of new technology in motion graphics**

- i. It help to convey messages in a faster way than the usual still graphics
- ii. With the new technology in motion graphics, it increases awareness in terms of promotion
- iii. It is cost and time effective. It gives room for production of catchy designs/concepts and raises brand recognition in the area of advertising.
- iv. It is easy and simple-the more people watch and read the more interesting it becomes

#### **Disadvantages of new technology in motion graphics**

- i. It is far cheaper to engage still graphics to motion graphics as motion requires a lot technical skills in operating the software and cost of production.
- ii. Only larger graphic outlets can afford to engage motion graphics
- iii. It requires a lot of effort and time to create.
- iv. Use of more storage spaces and requires high speed and uninterrupted power supply to create.

### **XII. The future of technology in graphic art practice**

The future of technology in graphic art practice is bright. With advancements in technology and graphic art been a field that deals with communication basically, the nearest future will witness a total transformation of communication graphics from analogue to completely digital. With technology, graphic artists and designers need not worry over complexity of design concepts as technology will provide simpler opportunities to deal with design challenges. Graphic art will be on the path towards trends that are simpler, yet more immersive at the same time and better customers’ experience.

In the nearest future, graphic designs will completely move away from static, taking up many new different patterns, digitally to pure movement as in motion graphics which combines movement, sounds and light. Multimedia graphics will sale more than static media. As the world shifts to a socially connected, digital society, graphic designers will operate digitally without any physical connection.

### **XIII. Conclusion**

Technology has influenced graphic art. The introduction of new technological advancements has also brought some advantages and disadvantages as far as technological advancement is concerned. Graphic designers are using the advancement to redefine graphic art. There is a complete shift from traditional methods of graphic production in the areas of printmaking, photography and motion graphics which seems to be top on the list of advancement as a result of modern software and devices which has made it convenient for designers to engage in carrying out their design task.

This research concludes that as much as technology has influenced the graphic art practice, it challenges cannot be left out but there are hopes that as the world continue to witness great improvement in all the spheres of life, graphic art will not be left out in the progress.

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