The Relationship of Music-Sound, Technology and Internet

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The Relationship of Music-Sound, Technology and Internet

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Abstract: Nowadays, music creation, collaboration and publication are easier because of technology. Most young generations have sent music data, made, sold, bought music files on the internet. This changed music processes certainly resulted in different outcomes. Listening and creating music by new means, can change music itself. Technology has simplified tools, and the internet has simplified the distance. But new problems and questions have been found. How were the internet and technology influenced the quality of music, music creator, music appreciator and the form of music. The aims of this research to determine the relationship between music, technology and the internet, through behaviour of the young generation. This study was qualitative research that used observations and unstructured interviews. In subsequent observations, participant-observer was chosen as an advanced research method to better understand existing phenomena. The result of observations and interviews were interpreted, then presented descriptively. This research used theory by Don Ihde that technology has three characteristics (1) material (2) used (3)relationship of human and tools. The result of this research is internet influenced music quality and human appreciation. Technology changed the way humans create music.

Keywords: Music, Sound, Technology, Internet

1. Introduction

Human musical taste does not exist intrinsically. Taste is related to environment, reference and tools often used. So does sound or music. Human taste in sound changes with advances of technology, resulting in a combination between sound and Internet. What is considered outstanding or mediocre is always subject to human's judgement.

In the last 20 years, the Internet has finally gained acceptance as a non-physical tool used in numerous aspects of our lives. Euphoria of the Internet has turned into dependence. Subsequently humans adapt and slowly try to take control of the Internet to create new creations.
Technology, as the origin of the Internet, has been a part of human's musical process for thousands of years. Music or sound is not only produced by unconstrained vocal cord but also by technology. Technology has shaped regular and measured scales in Western music which become parts of our daily lives in entertainment, musical creativity, music industry, and music education. On the other hand, sound is less restrained by measurement, but it is still influenced by technology in standardization of sound both in art and industry.

Technology is generally defined as activities related to techniques in the form of methods, logic, and human attempt to solve problems in practice both with or without tools. We refer to the term technology as defined by Don Ihde:

> Doh Ihde highlighted the relationship between humans and technology equipped with instruments and the immersion of technology in culture. Culture was seen as multicultural while technological tools are seen as cultural and scientific tools. Technology as defined by Ihde had 3 characteristics. The first component was matter as a concrete component. The second characteristic was the practical aspect in terms of usage. Lastly, the relationship between technological tools and humans who create, use, and transform them. (Lim 2008)

Ihde pointed out that technology is not only related to science and technology but is immersed in culture. Subsequently Ihde zeroed in 3 characteristics of technology. First component is the concrete component, matters or forms resulting from technology. The second component is the practical component or aspect of usage, how technology is used. The last component is the relationship between humans and technology -- technological tools and humans who create, use and transform them. Don Ihde's statement is clear on the development of music/ sound. The statement will be the foundation to describe phenomena of sound design course.

On the contrary, the way young generations produce and appreciate music differs from that of two centuries ago. Interesting phenomenon emerged from classes or forums that produced sound/ music digitally, among them was the Sound Design course at Universitas Multimedia Nusantara, specifically in 2019 (before the pandemic) and 2020 (during the pandemic). Some students mixed analog and digital sound; some used entirely digital sound. Music, technology, and the Internet as human's creations evolve. Technology exists as an extension of humans' hands and logic, which gives birth to the Internet. Music is used to

express one's self via sound. Tools or instruments used in music and how musical instruments used cannot escape science, but music/ sound must be created by humans to preserve humanity spirit in culture.

During the pandemic, the Internet has become the only tool to bring together people from various places to meet, exchange knowledge, and to collaborate. Musicians respond to one another with their musical compositions and give virtual concerts with or without sponsors. So did UMN Sound Design students this semester. The Internet gave them the possibility to make music together, responded sound in turn, sent audio data through networks and created music online by using Zoom and Teamviewer applications. Many students collaborated without using any musical instrument, merely using virtual instruments instead. Some applications enabled us to access screens without touching laptops; this is where collaboration starts.

Changed processes certainly result in different outcomes. Listening and creating music by new means, can change music itself. Subsequently, music appreciators will rate music with new standards. Suka Hardjana evaluated that art or music is not about outstanding or mediocre but about what is considered outstanding today and what was considered outstanding in the past (Hardjana 2018).

By observing current phenomena on music quality, the way new generations create and appreciate music, this paper aims to find the relationship between music, technology, and the Internet. What is the impact of technology on the creation process of music? What impact the Internet has on the format quality of digital music.

2. Method

This research used a qualitative method based on observation of young generation phenomena in Sound Design course followed by interviews. The Types of interviews used were unstructured interviews and focus group interviews. Malinowski stated that unstructured interviews were more often used in understanding behavior of a group of complex people without a priori constraints to obtain rich data. This is different from structured interviews which were more limited but produced more accurate data. (Denzin and Lincoln 1997).

In subsequent observations, researchers changed roles into participants and also performed those activities. Participant-observer was chosen as an advanced research method to better understand existing phenomena. The researcher then analyzed and interpreted digital music as an object of research and musician as a subject of research.

Other phenomena outside class were also observed to convince researchers that there was a similar tendency in our society, especially in digital society, in Instagram stories, IG TV, and Youtube. Observed tendency was checked against products or music creation which used technology and the Internet.

3. Result and Discussion

The relationship of music, technology and the internet have been researched in various fields. for example music publications, legal downloading including research that focuses on music publications, the legality of downloading, and music distribution.

Literature

Margounakis from International Hellenic University and Politis from Aristotle University of Thessaloniki researched the internet influence on music. They wrote an article entitled “The Effect of Networking Revolution on Digital Music” in the International Journal for Digital Society, containing the tendency of new musicians in cyberspace because of the internet. They formed or joined the community and distributed work independently, without regardless of major labels. They used youtube or a website to show their music. (Margounakis and Politis 2013)

Other literature has also discussed digital music marketing in Indonesia. The article entitled "Music Marketing in the Digitalization Era of the Music Industry in Industry 4.0 in Indonesia" has explained how musicians market their work. They were used music platform to sell their music (Dewatara and Agustin 2019)

The Internet of Musical Things (IoMT) has also discussed what has changed and what might happen in the future. The relationship between the audience, wired and wireless connections, smart instruments, musicians, and everything connected to them, is discussed in this article. (Tarchet, et al. 2018)

Other discussion is about digital, human musical sensitivity and consumerism. Most digital music players have no musical sensitivity in analog music instruments unless they studied analog musical instruments. When they have no sensitivity about analog music instruments, they need so many tools. Buy, buy and buy. (Murwaningrum 2015)

That is literature which is part of our reference, but none has yet discussed the relationship between music, technology and the internet that is observed by the tendency of the younger generation in making and appreciating music.

The Observation of Young Generation

This research is based on observations of The sound design course in 2019 at theFaculty of Art and Design, Visual Communication Design, Multimedia Nusantara University. During the course, students were learning to create music for visuals digitally based on technology. Students of this class had been a visual background and most of them did not have music skills. They began to learn from references, analyze and learn music theory in a fairly short time.

Some of them made TV Commercials, and the others made audio for their games. Technology has used to create chords, rhythms, melodies and sound characters according to concepts. Music was not made with a musical instrument, but on a qwerty keyboard, midi

controller, mouse or trackpad. Music references were also listened from online platforms that they had access via the internet network.

In 2020, the Sound Design course is being run online. Students have learned the music creation process independently from home, with material guides and video tutorials from the teacher. Their tools were not complete as campus tools (generally, students only use a qwerty keyboard, mouse or trackpad). They looked for references, analyzed references, learned simple music theory. Concepts and music were produced in cyberspace digitally. Discussions and collaborations happened with the zoom conference and team viewer application. Digital data were sent through the email, and saved the data in a folder on the cloud. They used materials for lessons not only by the lecturers. They were actively searched for other sources via youtube.

This activity has also been carried out by young people outside of campus. This fact was supported by IG story and youtube which feature music making activities, either collaboratively or individually in screen recording. They meet and collaborate in cyberspace, with various levels of music skill. Collaborate with colleagues across countries and across musical genres. Music is no longer made by people with high musical theory and skills. Now, music is starting to be made by anyone who needs music.

Music is sound, music is not always an analog musical instrument. Technology can produce sound without musical instruments, and the internet means transportation and etalase. Technology and the internet used by the younger generations to make and appreciate music. One question has been answered, How about the quality of the music that is made by technology then sent and published on the internet?

Reflecting on the explanation above, the connection between music, technology and the internet certainly has an influence for humans, especially music creators and users. The music changes slowly or radically. In this research, we want to explain that music is influenced by technology and the internet.

Music is often interpreted in various contradictory definitions. Music is romance, but it is also used for war. Music is universal but subjective. Music is sound in a complete concept, very obedient to the tempo but at different times the sound is free. Music is seen as an invisible complexity, but sometimes it becomes something so simple and easy.

Music Liberation

Music, which was previously known to be complex and invisible to the eye, immediately can be visualized and even light is able to transform into sound. That new theory has changed the definition and image of music for hundreds of years. For example in spectral music, the meaning of music is no longer fixed on conventional forms, such as pop, jazz, rock. Music is considered to be micro molecules (DNA) that look more detailed. There are no more tones, melodies, and harmonies in the formal sense, but "sounds" which are free from any ties, even cultural ties. Sounds can be freely explored.

> "Music is not a language. Any musical piece is akin to a boulder with complex forms, with striations and engraved designs atop and within, which men can decipher in a thousand different ways without ever finding the right answer or the best one. " (Xenaxis 1971)

One of the popular quotes from Iannis Xenakis, contained in his book entitled "Formalized Music: Thought and Mathematics in Composition" has destroyed the great paradigm. The paradigm is a conventional form of music, process and orientation of music. According to Iannis, music is no longer seen as a language or universal. Everyone is free to describe it in various ways, without right or wrong.

Technology and Music

Before the internet was invented, technology first influenced music. The discovery of sound reinforcement tools like microphones, voice recording devices, phonograph, gramophone, vinyl, cassettes and digital era are influenced music radically

Early 20th century, music was played loud in a crowd, high intensity because it was enjoyed by a lot of people. Music recording activities were only carried out in certain places and involved many people. A collective production. The 21st century, soundcard or music interface was invented. A lot of home industries emerged. Everybody enjoys music privately. Walkman with headphones, tape in the room as a personal item.

The home music industry sank the major labels that were victorious in the 1960-1990s decade. The invention of the DAW and MIDI (musical instrument digital interface) in 1983 was a massive change in the music industry. Now, everyone creates music on their own laptop. Sound engineering (synthesis, live processing, sound module), has succeeded in emerging “new habitus”. A new approach that could be a-historical and far from cultural. Ease leads to imitations.

In virtual instruments, sound is not tied to musical instruments, objects that are bound to culture. The sound of traditional music or sacred music can be attached to all genres of music. Music exists at two poles, sacred and profane. Most people consider that music is entertaining. It's the same with most people's perspective in the Mozart era. Mozart made music to entertain the palace guests. The difference between the Mozart era and today is the market and industrial systems. Industry and market make music appear as "stuff".

Technology has always been paradoxical between benefits and threats. Specifically in music, technology is often assumed to be an assistive tool, but it was not as simple as that. Technology influences human perspective which has an impact on meaning and appreciation. In fact, some new music and sound composers have a high dependence on technology equipment.

Internet and Music

Music becomes an activity "playing on the internet". We can collaborate, save and send music data, sell and buy on the internet, freely. Ianis Xenakis predicted decades ago that everyone was free to "define" music. “Define” means responding to music in different perspectives. Anyone can make their own music then distribute it over the internet. Skilled or unskilled musicians are difficult to distinguish. Focus appreciation of the digital society is "viral" or not, even though it does not convey an aesthetic impression.

Quality was very important. The song mixing standard follows the speaker industry which accommodates a wide range of frequencies. Now, Quality is not an important parameter, although the need for quality is still there. But, the pattern of relationship between humans and tools can override quality. Humans prefer to listen to music from a platform rather than listening to a more detailed CD. They are listening to music everywhere. Music files on the internet are getting slimmer and lighter weight.

The Internet eliminates distance and space, but on the other hand there is only virtual reality, no trace and a dependence on the internet. Physical activity is bound to distance and space, but to emerge the emotional impression, there are physical traces. The internet, for better or worse, brings the unsolved problem, namely latency. Andrew Hugill in his publication discussed how latency affects the relationship between composer and listener. It even affects the music file format and quality.

Discussions of Internet music often focus upon the technical characteristics of the network. The merits and limitations of the various audio file formats and the variability of the user's listening environment are significant constraining factors. The lack of ability on the part of the notional creator of the music to control the listening experience of the notional consumer has led to a blurring of the distinction between composer, performer and listener. Numerous inventive solutions to these constraints have been developed, many of which are described in this publication. Perhaps even more significant is the issue of latency: the amount of time required for a message to travel across the network (Andrew Hugill 2005). He also describes five types of "internet music" among them are:

1. Music that uses a network to connect a physical room or instrument
2. Music that is created or performed in a virtual room or using a virtual instrument
3. The music is translated into the sound aspect of the network itself
4. Music that uses the internet to create music together or perform together
5. Music which is sent via the internet with various types of interactions from its users (Andrew Hugill 2005)

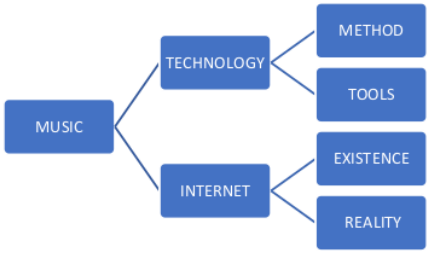
In the context of Digital Performing Studies, the internet has succeeded to change the human habit, art taste. The phenomena described above, clearly explain how production, distribution and consumption occur on the internet. Everyone can make, distribute, and consume something that is available on the internet.

Relasi Musik/Bunyi, Teknologi dan Internet

Bambang Sugiharto, in his article, explained about the new characteristics of humans because of the tools they use. This article, entitled "New Civilization", strengthens Don Ihde's theory that described earlier about three characteristics of technology: (1)material objects, (2)their use and (3)human relations with technology which greatly influence their views, ways of life, attitudes, and even their decisions.

Kompas newspaper on August 7 2020, Bambang Sugiharto explained that in a culture of communication and information, meaning becomes shallow. Meaning is not a reflection but a reaction. “The Meaning” is meant as reactions of likes, followers and subscribers on social media. The meaning is that we have shared only experiences, not reality. Externalization replaces reflection. Individuals no longer control the system, but the system controls the individual.

The satisfaction of many music creators that upload their music on the internet, is also based on netizens' responses (likes, followers, subscribers). In fact, people have not only changed their work patterns, but have become a "new habitus" that is controlled by the system. The Digital Music Platform available on the internet is the most relevant evidence for this statement. A golden era in which algorithms played an important role.



The Relationship of Music, Technology and Internet Scheeme

Music= Technology + Internet

The phenomenon that occurs in the process of making and appreciating music (especially in a pandemic situation) is no longer discussed interpersonal interactions, bodies, gestures, physical space, crowds, throwing bottles, headbangs, discos. Technology and the Internet have succeeded in creating a new movement and paradigm in the world of music, namely collaboration without limits, music without physical space even without musical instruments.

Technology= How It Works + Devices

Making music without musical instruments. The way of music is creativity and the mind, while tools are practical things or functions that can be performed blurring between creativity and thought. Everyone can be uncreative because they have been controlled by expensive and modern equipment.

Internet= Existance + Reality

The internet has become a network that provides a path and space for activity, self-expression as well as existence. The human needs to be "viral", make the humans do anything, including imitation, repetition, copy and paste in music, so we don't know who was the first creator. The Internet is a solution to new problems. The internet has a quality impact on music files.

Another issue is about existence. The existence of music in the internet era is not creating demarcation and hierarchy, but it creates a big gap for humanity. Some musicians who want to exist for a long time, are prone to feeling worries. The internet presents broad but narrow realities, fast but slow, easy but difficult.

4. Conclusion

Based on the observations of the younger generation, especially in digital societies who have appreciated music by online platform, create music with the digital tools, buy and sell music on the internet, it shows that there is a strong connection between music, technology and the internet. The tools and methods (technology) of making music and enjoying music affect the musician perspectives, music impression and quality. The media for displaying and listening to music (internet) affect the form and quality of music. We also accept music that is getting narrower every day.

The relationship between humans and technology changes the human perspectives. They want to access music in a simple form, and light . This is seen from the music platforms, such as iTunes, Spotify, YouTube are increasingly popular. Our society does not complain about music quality on platforms.

Technology is able to free music from its ties to instruments and culture. Musical sounds are produced by virtual instruments and controlled using a mouse, qwerty keyboard, keyboard controller. Digital audio workstations not only capable of recording. The technology is able to direct people who are unskilled at music to be able to make music according to their needs. In fact, they can collaborate with people around the world, working together on the internet network. The internet has become a one-stop market where we can get together, take something there, make something and sell it on the spot.

The digital society in cyberspace prefers the viral one. Virals are not always aesthetic. The existence of many musicians has also shifted, some of them still stick to quality but mostly to catch up on going viral. The internet exists as a network, a path and a place. Music is taken

from the market, made in the market, exhibited in the market and sold in the market. That market is the internet. Then we just follow the rules of the internet, accept the sound there.

Furthermore, whether humans are able to take over control of the system that controls them, or is this a new pattern of civilization? Looking far ahead, will there be a post internet era? It is only right that music, technology, and the internet are synergies that should not be read in isolation. The relationship between the three of them is not just a mode but a discourse.

5. References

Dellyana, Dina. 2020. Music Ecosystem mapping. Collaborate presentation of Koalisi Seni, KAMI, dan BETA.

Denzin K, Norman and Lincoln S, Yvonna. 2007. Handbook of Qualitative Research. California

Dewatara, Gerry & Agustin, Sari. 2019. Music Marketing in the Digitalization Era of the Music Industry in Industry 4.0 in Indonesia. Scientific Journal of Communication Science, WACANA vol 18 1 Juni 2019: 1-10

Doby, Michael Ian. 2001. The Impact of New Technologies of The Internet on The Music Industry: 1997-2001. Salford: Institute for Social Research, School of Music Media and Performance University of Salford.

Hardjana, Suka. 2018. The Aesthetic of Music: a Knowledge. Yogyakarta: Art Music Today

Hugill, Andrew. 2005. Internet Music: An Introduction. (Virtual Scores and Real The Playing). Contemporary Music Review. Routlede.

Lim, Francis. 2008. Philosophy of Technology: Don Ihde about Humans and Tools. Yogyakarta: Kanisius

Murwaningrum, Dyah. 2015. "Digital Technology as a Creative Media of Art". In proceeding of "The Art and Beyond" National Conference of Art Studies, 5 September 2015 Gadjah Mada University Yogyakaerta, edited Leilani Hermiasih et,al. Yogyakarta: Universitas Gadjah Mada 2015.

Martina Leeker, Imanuel Schipper, Timon Beyes (eds.). 2017. Performing the Digital: Performativity and Performance Studies in Digital Cultures. Niedersächsisches ministerium für wissenschaft und kultur.

Margounakis, Dimitrios & Politis, Dionysios. (2013). The Effect of Networking Revolution on Digital Music. International Journal for Digital Society. 4. 779-788. 10.20533/ijds.2040.2570.2013.0095.

Xenakis, Iannis. 1971. Formalized Music: Thought and Mathematics in Composition. Harmonologia Series 6. New York: Pendragon press

Turchet, Luca & Fischione, Carlo & Essl, Georg & Keller, Damián & Barthet, Mathieu.(2018). Internet of Musical Things: Vision and Challenges. IEEE Access 6 (Sept 0 2018): 61994-62017. 10.1109/ACCESS.2018.287.

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