Volume 22, No. 1 April 2024, 77-91
DOI: https://doi.org/10.31315/jik.v22i1.9113
Submitted: 12 February 2023, **Revised:** 27 March 2024, **Accepted:** 24 April 2024

Jurnal Ilmu Komunikasi
P-ISSN 1693-3028; E-ISSN 2407-8220
Accredited Sinta 2 based on the Decree No. 200/M/KPT/2020

Why We Should See YouTube From Digital Ecology Perspective

Romdhi Fatkhur Rozi[1], Rachmah Ida[2], Budi Irawanto[3]
[1]Jember University, Jl. Kalimantan Tegalboto no 37, Sumber Sari, Jember, Jawa Timur, Indonesia
[2]Airlangga University, Jl. Airlangga no 4-6, Gubeng, Surabaya, Indoenesia
[2]Gajah Mada University, Bulaksumur, Caturtunggal, Depok, Sleman, Yogyakarta, Indonesia
E-mail: romdhifr.sastra@unej.ac.id[1*]; rachmah.ida@fisip.unair.ac.id[2] ; birawanto@ugm.ac.id[3]
(087857679707)

Abstract
This study is a critical perspective in exploring changes in social, cultural and political forms related to the development of contemporary communication technology. The main theme of this research is YouTube's digital space with the topic of utilizing the main features of geo-tagging, hashtags and live streaming. Researchers observed three content creators in utilizing the features of the digital platform to carry out social interactions and actions. The purpose of this study is to explain that the character of the users and the current use of digital platforms is a representation of the interaction and socio-cultural situation of contemporary society as a part of the digital ecosystem. This research is qualitative in nature with specific observations on micro phenomena, so the results are not generalizations, but in the form of data findings to support the hypothesis, namely the importance of a critical perspective of digital ecology to explain contemporary digital ecosystem phenomena. This article is supported by comparative descriptions and descriptions of the development of several theoretical models as well as social-technological changes that have occurred before. This research contributes to providing an important perspective that media and technology studies must move from discussions about human and technology interactions, to discussions about human interactions in technology. As a study of ongoing phenomena, the researcher places this research by opening up to the potential for the latest changes that can occur along with technological developments.
Keywords: YouTube; Digital Ecology; Digital Culture; Ecosystemic Society

Abstrak
Kajian ini merupakan perspektif kritis dalam mengeksplorasi perubahan bentuk sosial, budaya dan politik berkaitan dengan perkembangan teknologi komunikasi kontemporer. Tema utama penelitian ini adalah ruang digital YouTube dengan topik pemanfaatan fitur utama geo-tagging, hastag dan live streaming. Peneliti mengamati tiga kreator konten dalam memanfaatkan fitur-fitur platform digital tersebut untuk melakukan interaksi dan aksi sosial. Tujuan penelitian ini adalah untuk menjelaskan bahwa karakter para pengguna dan pemanfaatan platform digital saat ini merupakan representasi dari interaksi dan situasi sosial budaya masyarakat kontemporer sebagai suatu bagian dari ekosistem digital. Penelitian ini bersifat kualitatif dengan pengamatan yang spesifik pada fenomena mikro, sehingga hasilnya bukanlah merupakan generalisasi, namun berupa temuan data untuk mendukung hipotesis yaitu pentingnya perspektif kritis ekologi digital untuk menjelaskan fenomena ekosistem digital kontemporer. Artikel ini didukung dengan deskripsi komparatif dan deskripsi perkembangan beberapa model teori serta perubahan sosial-teknologikal yang telah terjadi sebelumnya. Penelitian ini berkontibusi dalam memberi suatu perspektif penting bahwa kajian media dan teknologi harus beranjak dari diskusi-diskusi tentang interaksi manusia dan teknologi, menjadi diskusi-diskusi tentang interaksi manusia di dalam teknologi. Sebagai suatu kajian terhadap fenomena yang sedang terus berjalan (on going) maka peneliti menempatkan penelitian ini dengan membuka pada potensi-potensi perubahan terbaru yang dapat terjadi seiring dengan perkembangan teknologi.
Kata kunci: *YouTube; Ekologi Digital; Budaya Digital; Masyarakat Ekosistemik*

Introduction

This study examines the presence of the massive, fast and real time stream content of YouTube platform, which is not only an informative tool but also a place for a new cultural dialectic of digital society. Acerbi said that the current diffusion of digital media is very large and its influence on the behavior of most of the user population cannot be underestimated (Acerbi, 2016). In a society before the digital era, audiences were assumed to be passive users of the media (Gjoni, 2017), as in traditional media in the era of print and electronic media such as radio and television, the audience witnessed what was chosen for them.

In the previous media era, technology did not give users space to organically demonstrate their daily lives. The power over this access can be mapped among others owned by the owners of capital or at least by their internal economy (Bennett, 2006) such as program producers (television crew) and program objects (talents, artists, celebrities, etc.). Meanwhile in a digital society, internet technology allows them to produce and broadcast their content sporadically and widely, no longer limited to space, time and large resources. Interactive digital media platforms are changing the marketing landscape and the vast nature and sources of information and connectivity, essentially creating a 24/7/ collaborative world (Hanna et al., 2011).

This study does not focus on how the broadcast affects the audience, but it tries to depart from the assumption that the content produced proves the existence of an intensive relationship between humans and digital computerized technology, known as the concept of human computer interaction (Doherty & Doherty, 2019). This intensive relationship has an impact on the distribution of social, cultural, political dialectics in a digital ecosystem. This contemporary phenomenon is no longer enough to be seen only through the perspective of network society, but further from digital ecology perspectives. Routsalainen and Heinonen stated that the network society is increasingly turning into an internet-based ecosystem society (Ruotsalainen & Heinonen, 2015). The assumption is that today's digital space apart from having an economic impact, has become an organic ecosystem, for example in the micro-examples of division and work arrangements that have been digitally reorganized (Richardson, 2021) or even changes in social, cultural and social systems, new politics that go hand in hand with and (or at least) mirror the state of contemporary digital society.

The previous research on digital ecology considers that the ecological perspective is part of systems thinking. According to the systems view, the essential properties of an organism are the properties of the whole, not just of its parts. This study can also be explained through the network metaphor, that ecology is a form of network that can be understood as a set that interacts with each other through a relationship. That interaction system is considered as a network, and the logic of the network focuses on the emerging properties of a network (Raptis et al., 2014).

This study is also become the focus of Bettega who mentions three theoretical starting points to call the definition of ecology, namely product ecology, personal ecology and information ecology. The first two definitions focus on the interactions of different users, while personal ecology focuses on a single user and learns about how different artifacts (products) are used by a single user (Bettega et al., 2021). Bettega's study is an extension of a study conducted by Jung, et al who proposed the concept of artifact ecology to describe the implicit or explicit relationship between artifact interactions in one's personal life (Jung et al., 2008).

The previous research still focused on the interaction system in ecological space, and saw the parts in it as an artifact. However, it has not yet explained how these parts can meet, so the study of the role of features such as geo-tagging, hashtags, and live-streaming in this research is

important, because the support of an ecosystem is a system that supports how the ecosystem works. The presence of these multimodal features needs to be deepened as a perspective to provide depth on how digital ecological systems work, which has not been found from previous studies.

Antoniadis mentions that more organic options such as community networks do exist and empower users to build their local network from the ground up (Antoniadis, 2018). Social media and computer mediated communication allow people to hide unwanted characteristics and cast a greater spotlight on desirable characteristics (Hjetland et al., 2022). Before, broadcast technology which in the television era had to be done with various super expensive and complicated devices, now it can be done in a very simple and cheap way, even for free via live streaming on YouTube. Now, users can also broadcast live (live streaming) as is usually done by television stations. Even television stations now use YouTube to distribute their programs (Rachmat & Jemat, 2017). Researchers and practitioners need to have a better perspective in interpreting this large collection of contemporary digital content artifacts and communication patterns.

The organics process from each uploaded impression use hashtag usually symbolized by a '#' sign to determine a particular theme or keyword which makes it easier for search engines to classify each impression according to direct keywords or more general themes (Rozi, 2015). Not only the use of hashtags, but the presence of geo-tagging as multimodal features is also very influential in the distribution of content which more structured and targeted towards a specific audience. The distribution of this content is then manifested not only in the form of videos, but it also manifested in discussions in the comment column, all of which are forms of user micro-economic participation of the big knot global political economy from this digital media platform.

Sackey said that apart from social media encouraging dissemination of information and knowledge, multi-channel diffusion from YouTube has a positive and significant impact on economic growth (Asare Vitenu-Sackey, 2020). With the increasing speed of internet access, the YouTube site is considered as a major source of online entertainment (Olsson, 2019) and related terms such as "YouTubers" have become common terminology in many people's daily communication usage (Burgess et al., 2009). The concept of YouTubers does not only refer to the ability to produce video content, but also develops into a broader conceptual sense such as a symbol of the rise of the digital economy. The presence of YouTube is often even considered to replace audio-visual entertainment such as television, mainly because of its ease of access from various devices (Weibel et al., 2019).

YouTube using the user generated content method, previously known as a content aggregator. This method more or less describes the working process of a site to grow business and have a political-cultural impact by gathering content from its users (Holland, 2017). Derks even said that YouTube is starting to turn into an ad-friendly media professionally generated content because the platform is getting friendlier to an advertiser which brings in revenue for its creators (Derks, 2012). YouTube uses videos created by its users as a large collection of video viewing alternatives to television.

Along with the popularity of YouTube, more and more content creators are uploading their video content in various approaches to content production (Burgess & Green, 2009). These content creators are also involved in organic communities that arise from active interactions between users from all over the world. This content creator network (YouTuber), can be said to resemble a cross-country television network. This content creator network (YouTuber), can be said to resemble a cross-country television network. The difference is, they are not institutionalized separately like international television networks, but become one unit in an ecosystem digital space platform. They subscribe, visit/view and play, and

comment on the content produced. Creativity is reflected in various kind from the use of titles, soundtracks, choice of scenes based on themes or characters, musical performances in mush up and v-log formats (Rodríguez-Ferrándiz et al., 2016). Their behavior becomes a culture of consumption, digital literacy as well as massive digital participation on a cross-country scale.

This online experience also criticizes traditionalists notions of identity and suggests that many people reproduce their identities on the internet through multiple windows and are in constant contact with each other (Turkle, 1997). Currently, the construction of digital identity is a common phenomenon in the social life of contemporary digital society. YouTube users also are no longer fixated on the mainstream mass media as a key source of information. There are many alternative channels that provide information with a closer proximity to the life of the socio-cultural groups of their society. Users watch videos to seek information and pass them on for entertainment and viewing together as a form of social interaction and this reflects the characteristics of their social networks (Haridakis & Hanson, 2009). Along the way, the quality of distributed information has also continued to increase, along with the awareness of content creators to produce competitive shows, on the other hand, the audience's awareness has also grown to determine which sources are trustworthy and which are not.

This ecosystem technological situation occurs globally, including in Indonesia. There is an interesting statement in Tapsell's writing that was made by Ignatius Haryanto about his anxiety and hope for a space for community-based media that can survive in the convergence era, especially to create media freedom and new political power outside of the dominance of mainstream media conglomerates which in fact are also owned by the national politicians (Tapsell, 2015). This view of media convergence must also be developed further, due to changes in the landscape of digital platforms that bring a new culture, that grows organically within a digital media ecosystem. Digital mediation relationships have the potential to grow progressive environmental communities, because there is a meeting between humans and non-humans (technology) and the creation of a better form of government (Turnbull et al., 2022).

The intensive digital communication provides a high digital engagement, thus (Taffel, 2019) rejects the dualism of subject/object, nature/culture and representation/reality while emphasizing the inseparability of material quality and experience from digital mediation. According to Taffel this position provides a useful basis for developing a holistic approach that pays attention to energy, matter, information, data, code, and attention. The ecological view of digital media directs us not only to focus on the surface level of the content faced by digital media users, but also to consider what (Lyle et al., 2020) mentions such as software capabilities, digital platform features simultaneously and not separated.

From this background description, this research aims to explore why contemporary studies of digital space must use the important perspective of digital ecology to respond to changing patterns of use of the YouTube platform. This research focused on observing the use of geo-tagging, hashtag and live streaming features that connect social, political and cultural contexts between user of digital space ecosystem.

Research Methods

This study uses a qualitative method with a digital ethnographic approach. Digital ethnography is a method used to answer social questions about digital space (Kaur-Gill & Dutta, 2017). Like the ethnographic approach, it requires involvement in field observations, so researcher positions himself as a YouTube user who experiences direct involvement. The definition of users in this case is content creators as well as viewers who also interact with YouTubers for further investigation and describe joint actions by individuals and communities. Digital ethnography is carried out to explore

views of life from the perspective of individuals and society by raising the phenomenon of action practices carried out by individuals or communities to find the meaning of what they express.

If ethnography is done in real space, then digital ethnography is done in the digital space on the YouTube platform. In the process, the selection of accounts was carried out using a purposive sampling method, namely by taking random samples that were targeted to have special attributes as envisioned by the researchers before going to the field. To focus on the research location, a selection of accounts was carried out which indicated that they represented collective actions that implied socio-cultural-political actions that reflected a similar action carried out in everyday life. This understanding becomes a basis for viewing digital space as an ecosystem social environment, namely digital space that can be seen from an ecological perspective. The goal is to prove that an ecological view (the science of ecosystems) can be applied in digital space.

Results of Research and Discussion

The first observation was made of the fundraising activities carried out by the Johnny Harris channel to protest the war between Russia and Ukraine. In his digital space activities, Harris broadcasts video content broadcasting war activities with grisly depictions of how war unfolds. Harris' mission is to end the war immediately, and he raises funds to save the child victims of the war between the two countries. Harris conveyed in his broadcast description that children who were victims of war experienced physical, emotional attacks, prolonged stress, and needed help from the global community, so other users of YouTube's digital space to donate funds to improve the living conditions of the victims. The broadcast collected around 261 thousand dollars.

In the video content entitled "Putin Will Lose, Here's Why" which was uploaded by Harris, he acted as the organizer of the fundraising event and collaborated with the international non-profit organization Save The Children. Harris hails from Washington DC United States and joined YouTube in 2011. He is known as an international filmmaker and journalist. At the beginning of 2023, Harris's channel @ johnnyharris had 3.2 million subscribers, which is relatively more than most other YouTube users. With this strength, Harris is able to reach a wider audience, especially those who have the same vision and interest in the social criticism. This audience reach is done by YouTube through a certain algorithmic mechanism that directs Harris content to relevant, specific and potential target users. In the widget column on the right of his upload page, Harris wrote a description of his fundraising activities. In the description column at the bottom of the video, Harris has embedded a link that directs other users to send their donations.

Harris' content is no longer just a video upload, but also a locus for open public discussion interactions. In addition, this content also has a direct impact in the form of donations by the audience. The relationship between Harris as a content creator and his audience is no longer just in the sense of producer and audience, but more like social interaction. The communication model that occurs on the YouTube platform is also increasingly interactive, because apart from providing space for social dialectics, it is also a place for financial transactions involving several parties. This organic interaction is like the organic social interaction that we encounter in real life.

In the second observation is Tepe46 channel, which broadcasts the Donathon program (donate and marathon) live streaming on his YouTube channel. Tepe46 is a content creator based in East Java, Indonesia. Most of the content uploaded on his channel is entertainment video content, such as miniseries, gaming, and product reviews. This channel, which is owned by Teguh Prakoso, at the beginning of 2023 had 357 thousand subscribers since joining YouTube in January 2007.

The concept is, he broadcasts live streaming about various daily activities with his team, and then opens opportunities for other users to donate through the mechanism he describes in the video description. In this Donathon live streaming show, channel Tepe46 receives a donation mechanism through the Sociobuzz website, and then creates a description of the donation by dividing it into several extended live streaming durations.

In the Donathon content, Tepe46 interacts directly with the audience interactively during the live streaming duration. Communication occurs in one live event that lasts for several days non-stop. During the broadcast, Tepe46 and his team carried out several activities such as talk shows, playing music, playing games, and others. Viewers who donate can ask Tepe46 and the team to do some unique and funny things with the aim of entertaining other viewers. Public discussions also took place during this process in the live streaming comments section. This activity is very different from watching activities that occurred in electronic media in the previous era. In this YouTube digital platform, organic communication between multiple users occurs directly, quickly and interactively. All communicative interaction events occur at that moment. This is a significant further development than just uploading video content, then viewers watch and comment on times and situations that are different from the actual events.

The third observation was made on the live streaming broadcast of the Ferdy Sambo case trial which was stream through KompasTV media channel via YouTube. The KompasTV channel is managed by a private television station in Indonesia. As a mass media institution that has high credibility, KompasTV is a trusted source of information for the public. Even though they have an official website page that broadcasts their content, KompasTV also manages a YouTube channel with 14.3 million subscribers and is an alternative space for distributing their broadcast content on digital platforms. The video content on KompasTV's official website instead uses the video embed feature of the content they broadcast via YouTube. By utilizing this feature, the website can make digital data storage space efficient, because all data files are stored on the YouTube platform.

One of the contents that was broadcast on the Kompas TV channel and caught the public's attention was the open trial of the Ferdy Sambo case. In a live broadcast via YouTube there is direct interaction between events, television media, digital platforms, and viewers / YouTube users. The viewers witnessed the trial events and were involved in public discussions through live streaming comments. In this broadcast, the events of the trial will no longer be news content, because (yet) no news has been broadcast as a news editorial. In this case news events are no longer relevant for explaining the content of the live broadcast, but events and direct comments from the viewers of the broadcast are even more relevant as a form of organic communication interaction from the participants of the YouTube digital ecosystem. This means that there is direct interaction and meaning from the audience towards an event, so that the study of news content is no longer relevant in this study. On the other hand, the meaning of audience interaction is actually one of the main points of how digital ecosystems studies becomes an important review of phenomena in the digital space.

The roles and functions of the live streaming, hashtag and geo-tagging features in these three channels are very significant in determining fundamental changes in social interaction in the digital space. Live streaming makes all interactions happen in real time, without delay, sent directly from an event and received at the same time by the audience. Hastags break down these events, according to specific themes that are relevant to specific audiences. Meanwhile, geo-tagging directs topics that suit certain audience characters to more specific areas. The distribution of content in the digital space has a different character from the distribution of content that occurred in the traditional media era, which still relies on the

widest possible pattern of content distribution but does not consider the principle of message accuracy to specific and relevant targets. This model uses the network concept as the basis of the mass communication model. As a result, the model of mass communication that took place during that period encountered many communication barriers. This logic provides a fundamental difference from the communication model in the digital era which is equally massive but very measurable.

In an organic context, communication occurs based on the similarity of certain themes and topics, so that organic communication works like an organism that grows according to its function. In the context of social interaction, this manifests itself in more organized patterns of interaction, according to the themes and topics of concern to the participants in the communication. This provides a new understanding that the social situation in the digital space is different from the social situation resulting from the mass communication model in the context of a network society.

From these three observations it was found that first; interaction between content creators and viewers occurs in real time, through a live streaming broadcast mechanism. Interaction occurs intensely during the duration of content display, not only at the discussion level, but also at the action level such as transferring donations from viewers, or when content creators fulfill certain action requests from viewers who have donated funds. This donation action in the perspective of communication effects is like the hypodermic needle theory which assumes that the impact of communication is very large and direct. This means that the communication event proves an intense interaction between the sender of the message, the relevant theme, the speed of access, and the specific location where the communication process occurs. Second, interaction through live streaming reduces the meaning of news because the broadcast is almost without editorial and editing processes. The audience witnessed the events directly and absorbed the information provided with very little journalistic framing as seen in the content of the Sambo trial. The distribution of these contents is heavily influenced by the use of geo-tagging and hash tagging features, which can be seen from the difference in audience between Harris' and Tepe46's content.

The digitization process reframes the notion of space and time, due to the availability of a new approach of connecting between users via the internet infrastructure. An important development is the availability of the mobile web which allows access to the location and time information base on the user's gadget in real time. The increasingly intelligent technologies provide opportunities to influence our habits, and develop current usage practices (Raptis et al., 2014). Silva refers to the development of such overlapping physical spaces with digital spaces as 'hybrid spaces' (de Souza E Silva, 2006). This hybrid space means there is a mix between physical space and digital space. Jung (Jung et al., 2008) proposed the concept of artifact ecology borrowing Gibson's terminology (Gibson, 2015) as a set of all physical artifacts with some degree of interactivity made possible by digital technology that a person owns, accesses and uses. The rationale for including non-digital artifacts in the study reflects the overlapping relationship between the physical and digital environment (Bettega et al., 2021).

The idea of this study is a continuation of what has been done previously about the interaction system in ecological space, which sees its parts in it as an artifact (Jung et al., 2008) (Bettega et al., 2021). This study tries to offer a perspective on how these parts can meet through the role of technological features. This study considers that the support of an ecosystem is a system that supports how the ecosystem works, one of which is the use of multimodal technological features to provide depth on how digital ecological systems work.

The relationship between physical and digital space is also connected on the YouTube platform when creators are supported by geo-

tagging, hashtag and live streaming features, this provides a change in the fundamental basic assumptions of the form of digital space. From this explanation, YouTube's digital space is no longer just a space that accommodates videos as a product of user generated content, but it has turned into a new social space, in which direct, simultaneous and real time user interaction takes place.

First, the geo-tagging feature changes the initial perception of the internet as a digital space that is vast and free from geographical boundaries. However, in principle, this feature actually provides restrictions that refer to the notion of geographic boundaries themselves. The use of the geo-tagging feature will automatically help the YouTube algorithm to prioritize distributing content in areas close to the location tag where the video was uploaded/produced/the channel originates. This connection influences how users coordinate their social interactions in the digital space. Early studies related to this were research (Caillois, 2001) (Huizinga, 1949) which paid attention to the new social environment. Both investigate the reframing of spatial relationships through a platform that affect user mobility choice. The term Location Based Social Network (LSBN) is used to see how users make mobility/ navigation choices and spatial relationships in digital space (Saker & Evans, 2016). With this technology, humans are connected to a digital space where the locus of their environment can be formed in such a way that it seems as if they are still in the same geographic environment as their daily lives in the real world.

Second, hashtags limit the distribution of content themes to users who are interested in a particular topic from a video. This feature directs content to a more specific and segmented audience, also as new identification approach separates social groups, as well as certain discussion themes in a digital space. The hashtags make it easy for users to sort and combine information according to certain topics, while platform use them to help classify big data. In its development, the use of hashtags has become increasingly varied, these communicative functions include topic markers, aggregation, socialization, reasons, irony, providing metadata, expressing attitudes, starting movements, propaganda, and marketing certain brands (Laucuka, 2018). The use of hashtags in the digital space has communicative cultural function, and also accommodates political and economic potentials. Hashtags from a linguistic pragmatic perspective, are traditional speech act frameworks that can be applied in the study of social media and their use not only for categorizing labels, but also for composing, playing, and commenting (Wikstrom, 2014). Sociolinguistic hashtags in nature means that, this approach can be used and interpreted that linguistics is a community/social lens (Zappavigna, 2012).

Third, the live streaming feature gives the sensation of losing the time gap between an event and the audience. Its direct nature on the spot makes the interactions become like direct interactions in the real world. The functions of news media institutions that cover, summarize and broadcast news of an event are eroded, because the audience has witnessed important information from a trusted primary source. Social interactions that occur in the comments column also occur and take place on the spot, such as public discussions in everyday social circles.

These three features form today's digital media no longer only be seen through the perspective of network society because of the nature of the digital space increasingly real time and distributed in specific socio-cultural and political spaces. Electronic media such as radio and television make quite fundamental changes in society by connecting space and the social-physical environment, making them interconnected, so that private spheres often become public domains, and so on (Meyrowitz, 1997), but the internet allows information to flow further, making institutions and organizations more radically involved in this public space. New media include internet and the World Wide Web, digital television, digital cinema, personal computers, portable media players, cell phones,

video/computer games, virtual reality, and artificial intelligence (Creeber & Martin, 2008).

The digital ecology perspective is a continuation of the concept of a networked society, which was alluded to by van Dijk when he provided a fundamental starting point to describe how technological developments have so far managed to integrate into the everyday life of a networked society. Van Dijk stated that there is new infrastructure for contemporary society, not only language as a communication link, roads as links between regions, cable networks, pipes and others, but also computer networks, namely the internet. This infrastructure development as a long-term evolutionary process of networked community systems (van Dijk, 2006).

Table 1. Development of Community Network Forms

Traditional Networked Societies	Information Society	Modern Networked Society (Mass Society)	Digital Society
The formation of groups of people who live in an area	Urbanization, population growth, and information growth.	The establishment of a cross-country electronic media broadcast system.	The creation of collaborative opensource applications.
The formation of a network of metropolitan cities (Mesopotamia, Egypt, Indus, Mexico, etc.)	The formation of print media system and local distribution.	The establishment of web 1.0 internet network. Broadband communications.	Plat forming social, cultural, political interactions in the digital space.
The formation of great civilizations such as India, China, Greece, etc.	Traditional historical archiving, traditional library.	The creation of global communication, network state and new economy.	Algorithm, Internet of things, artificial intelligence, metaverse.
The connection between European and American civilizations, etc.	The relations between individuals, between organizations across regions.	The establishment of web 2.0 internet network. Real-time communication.	Digital economy, digital culture, digital politics, digital social ecosystem.

Source: Author's thesis manuscript, 2023

From the table it can be seen that community development forms social relations and communication that are different from time to time. In a more traditional form, communication links are established through physical space and infrastructure networks connecting geographical areas. This pattern developed in the next period, when the physical space changed into an electronic-digital space that has a denser ecosystem of content and users, and all of them are connected through a technological network infrastructure. In the digital space, the user ecosystem grows as a representation and mirror of the traditional networked version of society. However, the format of social relations in the digital space is influenced by technological factors which have different characteristics from network technology in mass society and information society. In a mass society and an information society, content is broadcast widely and massively without extra attention to relevant and specific communicant targets, whereas in a digital society the presence of algorithms provides different patterns of information distribution that are more measurable and directed.

When digital devices are interconnected, the representation of individuals and forms of networked community connectivity become more sophisticated. Hills revealed, the tradition or culture of participation is commonplace that 'must' be carried out in a digital society. When digital space (cyberspace) is available, digital

culture (cyber culture) also grows (Hills, 2009). The culture according to Hills is mobility, interactivity, and identity. Then, a critical tradition is also increasingly to understand contemporary phenomena in digital space, one of which is by using a mediality approach that studies the consequences of mediating between social relations, and sees communication as a basic practice of how people construct the world socially and culturally. It supports critical construction, because it's mediation of various forms of socio-cultural relations as a basic practice of how communication builds a social and cultural world.

Mediality placed in parallel with globalization, individualization, and commercialization and between social processes that change the culture of communication. The development of this approach must also be positioned not only as an analytical concept, but also as theoretical basis. Livingston emphasizes that it refers to meta-process in which daily practices and social relations historically have been formed by mediation processes (Livingstone, 2009). Knut Lundby also anticipates this study by saying that the process of mediatization affects almost all areas of social and cultural life in the context of late modernity (Hepp et al., 2015).

This study is rooted in Friedrich Krotz's thought that the idea of mediality is not a single transformative logic "inside" a media, but a meta category of social description that shows the changing dynamics and dimensions of entire social world in the media era. The media can be defined in terms of mediality as a structure and a situation. Both allow communication to occur and modify it. Krotz emphasizes that it's focuses on the status of society as a media society and all the consequences that follow, so it must become a key idea in the development of contemporary communication theory and media studies. The main idea is not only on changes in media system but also on issues of changes in communication and related matters, for example at the micro level; where there is a change in the pattern of individuals, their daily routines, and social relations; whereas at the meso level there are also changes in various parties outside the individual, various organizations and businesses, and institutions; as well as at the macro level there are political, economic, social and cultural changes in society (Krotz, 2014).

Social mediality in this digital space is like a digital ecosystem consisting of various platforms in the internet environment. There are social consequences of media disruption according to the perspective of the ecological media tradition, that media is a 'living environment' (Ruotsalainen & Heinonen, 2015). This tradition looked at the relationship between people in different areas, between individual interests and public interests, between work and leisure, as well as relationship between various institutions, organizations, communities, institutions which are increasingly prevalent due to the presence of electronic media and digital media. The main argument is the internet has penetrated all areas of people's lives, so the ecosystem metaphor can be used as an ideal phrase to describe the state of contemporary media environment.

Media ecology perspective is also appropriate as a critical perspective because it does not only focus on the means of communication such as technological devices and features that accompany digital space, but also focuses on seeing digital space as a social environment that is similar to other social environments. Meyrowitz's media ecology perspective helps fill in the weaknesses of network society theory. In the ecological conception of media, hierarchical bureaucracy is replaced by more equal and interactive networks. Previously in the theory of community networks, some of the theories talked about separate community networks, not integrated community networks. The condition of this integrated community network is still not achievable from those perspectives, because the network itself is still controlled by the authorities. This means that the networked community has only reached halfway to a unified networked

society.

The diaspora power in the internet era has melted into smaller pieces so that power can be owned by anyone, with a faster and real time distribution. It can be claimed that the internet and its various platforms that make a network society get the most ideal form, becoming an integrated network society. Borders between organizations and organizations, institutions / institutions with the public, organizations and institutions with individuals, individuals with individuals, will merge into the flowing information between them. At the same time communication within the network will merge into a part of the individual. Digital space becomes a mirror of social reality as well as a link for all. The form of this interaction can more or less be described as in following schematic image:

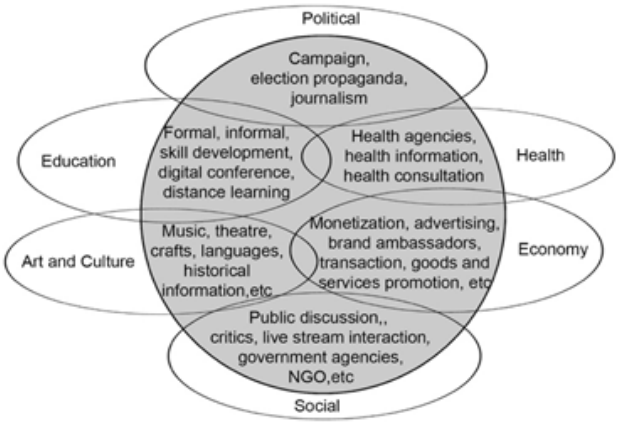

Figure 1 Illustration of digital space ecology
Source: Author's thesis manuscript

The illustration in the image 1 can be described that in the digital space, social ecosystems are interconnected, communication interactions between various fields also occur in the same space, so that everything appears to overlap in the same unified space and time. The presence of an algorithm regulates the distribution of each of these fields to the appropriate target audience. The algorithm acts like an automatic mechanism whose formula is structured in such a way that users get the maximum benefit from social interaction in the digital space. The pattern of interaction that is formed provides a fundamental cultural change to the pattern of social relations in contemporary society, which is very different from the pattern of community interaction in the previous period as depicted in table 1.

In the perspective of digital media ecology, investigation of the relationship between media change and societal change can avoid technological determinism. This perspective can explore the emphasis on the interactive features of new media and social constructivist approach to media technology, so it can be free from its innate logic which implies power relations. Digital ecology also sees media as a social environment that has relevance to the physical social environment. From the phenomenon of YouTube creator, content described in this study it appears that more and more social interactions are taking place on this platform, indicating that digital society as a whole is starting to develop according to an ecosystem organizing model.

This ecosystem metaphor is relevant to the tradition of media ecology, which shows the blurring of the boundaries of each field of life. Marshall McLuhan's concept of global village and McLuhan's digital medium (acoustic space) are very relevant. The global village view is embodied in the concept of a digital ecosystem, and the concept of acoustic space can also be

seen from digital space which is increasingly converging into a space without partitions and connected to one another (Barichello & Carvalho, 2013) (Findlay-White & Logan, 2016). Moreover, the interactive nature of the hypertext web on the latest internet technology also directs more sophisticated changes from written expressions to oral traditions which are supported by the presence of audio-visual (video) technology. YouTube is a very accurate representation of this view, it connects social dynamics with digital space, which grows in an ecosystem of mutual support, while the concept of mediality assumes that everyday life is connected in a mediation process. Both views of media ecology and mediality perspective succeed in looking further at the role of communication technology in shaping culture and vice versa.

Media ecology study also complements the study of media effects which only concentrates on media content, not on media technology issues. This means that the study of media effects looks more at media content as source of social change. It describes production and capital, which pave the way for economic growth, the sale of services which replaces the initial production materials, and so on. Both information society theory, post-industrialism and network society, all three refer to postmodern culture which emphasizes the construction of reality through language, and pluralistic, individual culture with many interpretations and values (Webster, 2006). Media ecology focuses more on analyzing media content and how it influences society, but places the media as a coherent and organic part of the information and communication ecosystem. This research also provides an important contribution in the form of a new perspective that media and technology studies must depart from discussions about the interaction of humans and technology, such as what has been widely discussed in the two major paradigms of Social Construction of Technology and Technological Determinism. One of them is to start looking at human interaction within technology itself.

Conclusion

The digital era is increasingly and critical studies should refer to the ecosystem interactions which offer a new social framework. The conception of ecosystem society, all network points merge into one ecosystem unit that supports each other. The Internet creates a new social-ecosystem that has culture grows because its users continue to use, and continue to develop as a kind of middle way that digital space cannot be interpreted partially. It becomes a critical approach which able to explain how the social interaction of contemporary society with the latest developments in communication media. In addition, this technological development is on-going phenomenon so that social practices in other digital spaces related to the use of technology will certainly also have the potential increasingly diverse. These facts make the perspective of digital space as a social ecology even more important viewing changes in contemporary culture.

References

Acerbi, A. (2016). A cultural evolution approach to digital media. *Frontiers in Human Neuroscience*, *10*(DEC2016). https://doi.org/10.3389/fnhum.2016.00636

Antoniadis, P. (2018). The organic internet: Building communications networks from the grassroots. In *Co-Designing Economies in Transition: Radical Approaches in Dialogue with Contemplative Social Sciences* (pp. 235–272). Springer International Publishing. https://doi.org/10.1007/978-3-319-66592-4_13

Asare Vitenu-Sackey, P. (2020). The Impact of Social Media on Economic Growth: Empirical Evidence of Facebook, YouTube, Twitter and Pinterest. *International Journal of Business, Economics and Management*, *7*(4), 222–238. https://doi.org/10.18488/journal.62.2020.74.222.238

Barichello, E. M. da R., & Carvalho, L. M. (2013). Understanding the Digital Social Media From McLuhan's Idea of

Medium-Ambience. *Matrizes*, *7*(1), 235. https://doi.org/10.11606/issn.1982-8160.v7i1p235-246

Bennett, T. (2006). Distinction on the box: Cultural capital and the social space of broadcasting. *Cultural Trends*, *15*(2–3), 193–212. https://doi.org/10.1080/09548960600713080

Bettega, M., Masu, R., & Teli, M. (2021). It's like a GPS community tool: Tactics to foster Digital Commons through Artifact Ecology. *DIS 2021 - Proceedings of the 2021 ACM Designing Interactive Systems Conference: Nowhere and Everywhere*, 1710–1725. https://doi.org/10.1145/3461778.3462034

Burgess, J., & Green, J. (2009). YouTube - Online Video and Participatory Culture. In *Polity Press*. Polity Press.

Caillois, R. (2001). *Man, Play and Games* (M. Barash, Ed.; French Translation). University of Illinois Press.

Creeber, G., & Martin, R. (2008). *Digital Culture: Understanding New Media* (G. Creeber & R. Martin, Eds.). Mc Graw Hill Open University Press. https://books.google.co.id/books?id=sOlEBgAAQBAJ

de Souza E Silva, A. (2006). From Cyber to Hybrid: Mobile Technologies as Interfaces of Hybrid Spaces. *Space and Culture*, *9*(3), 261–278. https://doi.org/10.1177/1206331206289022

Derks, R. (2012). *On the Institutionalization of YouTube and the Status of the Broadcast Yourselff Potential - Evaluating YouTube's potential for user empowerment in the light of its institutionalization* [Thesis]. Tilburg University.

Doherty, K., & Doherty, G. (2019). Engagement in HCI: Conception, theory and measurement. *ACM Computing Surveys*, *51*(5). https://doi.org/10.1145/3234149

Findlay-White, E., & Logan, R. K. (2016). Acoustic space, marshall mcluhan and links to medieval philosophers and beyond: Center everywhere and margin nowhere. *Philosophies*, *1*(2), 162–169. https://doi.org/10.3390/philosophies1020162

Gibson, J. J. (James J. (2015). *The ecological approach to visual perception* (Classic Edition). Taylor & Francis Group.

Gjoni, E. (2017). From Passive Viewers to Content Generators: Audience Role on TV Programs and Online Media. *Journalism and Mass Communication*, *7*(2). https://doi.org/10.17265/2160-6579/2017.02.001

Hanna, R., Rohm, A., & Crittenden, V. L. (2011). We're all connected: The power of the social media ecosystem. *Business Horizons*, *54*(3), 265–273. https://doi.org/10.1016/j.bushor.2011.01.007

Haridakis, P., & Hanson, G. (2009). Social interaction and co-viewing with YouTube: Blending mass communication reception and social connection. *Journal of Broadcasting and Electronic Media*, *53*(2), 317–335. https://doi.org/10.1080/08838150902908270

Hepp, A., Hjarvard, S., & Lundby, K. (2015). Mediatization: theorizing the interplay between media, culture and society. *Media, Culture and Society*, *37*(2), 314–324. https://doi.org/10.1177/0163443715573835

Hills, M. (2009). Participatory Culture; Mobility, Interactivity and Identity. In G. C. and R. Martin (Ed.), *Digital Cultures - Understanding New Media* (First Edit, pp. 107–121). Mc Graw Hill Open University Press.

Hjetland, G. J., Finserås, T. R., Sivertsen, B., Colman, I., Hella, R. T., & Skogen, J. C. (2022). Focus on Self-Presentation on Social Media across Sociodemographic Variables, Lifestyles, and Personalities: A Cross-Sectional Study. *International Journal of Environmental Research and Public Health*, *19*(17). https://doi.org/10.3390/ijerph191711133

Holland, M. (2017). How YouTube Developed into a Successful Platform for User-Generated Content. *Young & Creative - Digital Technologies Empowering Children in Everyday Life*, *7*(1), 52–69. https://doi.org/10.1016/j.virusres.2006.01.022

Huizinga, J. (1949). *Homo Ludens; A Study of The Play-Element in Culture* (German Translation). Routledge and Kegan Paul.

Jung, H., Stolterman, E., Ryan, W., Thompson,

T., & Siegel, M. (2008). Toward a Framework for Ecologies of Artifacts: How Are Digital Artifacts Interconnected within a Personal Life? *Proceedings of the 5th Nordic Conference on Human-Computer Interaction*, 201–210. https://doi.org/10.1145/1463160.1463182

Kaur-Gill, S., & Dutta, M. J. (2017). Digital Ethnography. In *The International Encyclopedia of Communication Research Methods* (pp. 1–10). John Wiley and Sons. https://doi.org/10.1002/9781118901731.iecrm0271

Krotz, F. (2014). From a Social Worlds Perspective to the Analysis of Mediatized Worlds. In Leif Kramp, R. Kilborn, E. Sundin, T. Olsson, R. Kunelius, H. Nieminen, I. T. Trivundža, A. Hepp, & N. Carpentier (Eds.), *Media practice and everyday agency in Europe* (pp. 69–82). Lumiere.

Laucuka, A. (2018). Communicative Functions of Hashtags. *Economics and Culture*, *15*(1), 56–62. https://doi.org/10.2478/jec-2018-0006

Livingstone, S. (2009). On the Mediation of Everything. *Journal of Communication*, *59*(1), 1–18. https://doi.org/10.1111/j.1460-2466.2008.01401.x

Lyle, P., Korsgaard, H., & Bødker, S. (2020, October 25). What's in an Ecology? A Review of Artifact, Communicative, Device and Information Ecologies. *ACM International Conference Proceeding Series*. https://doi.org/10.1145/3419249.3420185

Meyrowitz, J. (1997). Understanding of Media. *Culture*, *11*(3–4), 44–52.

Olsson, R. (2019). *YouTubers; An anthropological exploration of YouTube content creators* [Thesis]. Lund University.

Rachmat, I., & Jemat, A. (2017). The use of social media Youtube as audio-visual record document management: Exploratory study of application the guidelines behavior broadcasting, standard of broadcast programs (P3 and SPS) ANTV on Pesbukers television program. *Record and Library Journal*, *3*(1), 38–49. https://doi.org/10.20473/rlj.V3-I1.2017.38-49

Raptis, D., Kjeldskov, J., Skov, M. B., & Paay, J. (2014). What is a digital ecology? Theoretical foundations and a unified definition. *Australian Journal of Intelligent Information Processing Systems*, *13*(4). https://www.researchgate.net/publication/322682267

Richardson, L. (2021). Coordinating office space: Digital technologies and the platformization of work. *Environment and Planning D: Society and Space*, *39*(2), 347–365. https://doi.org/10.1177/0263775820959677

Rodríguez-Ferrándiz, R., Kiko, V. T.-V., & Contreras, M. (2016). The Tube on YouTube: TV Series, Media Strategies, and User Tactics in a Transmedia Environment. *International Journal of Communication*, *10*, 1991–2013. http://ijoc.org.

Rozi, R. F. (2015). Distribusi Konten Tayangan Televisi Swasta Lokal di Kota Jember Melalui Media Online. *Literasi*, *5*(2), 208–215. https://jurnal.unej.ac.id/index.php/LIT/article/view/6101

Ruotsalainen, J., & Heinonen, S. (2015). Media ecology and the future ecosystemic society. *European Journal of Futures Research*, *3*(1). https://doi.org/10.1007/s40309-015-0068-7

Saker, M., & Evans, L. (2016). Everyday Life and Locative Play: An Exploration of Foursquare and Playful Engagements With Space and Place. *Media, Culture and Society*, *38*(8), 1169–1183. https://doi.org/10.1177/0163443716643149

Taffel, S. (2019). *Digital Media Ecologies; Entanglements Of Content, Code And Hardware*. Bloomsbury Academic.

Tapsell, R. (2015). Platform Convergence in Indonesia: Challenges and Opportunities For Media Freedom. *Convergence*, *21*(2), 182–197. https://doi.org/10.1177/1354856514531527

Turkle, S. (1997). Multiple Subjectivity and Virtual Community at the End of Freudian Century. *Sociological Inquiry*, *67*(1), 72–84. https://doi.org/10.1111/j.1475-682X.1997.tb00430.x

Turnbull, J., Searle, A., Hartman Davies, O., Dodsworth, J., Chasseray-Peraldi, P., von Essen, E., & Anderson-Elliott, H. (2022). Digital ecologies: Materialities, encounters, governance. *Progress in Environmental Geography*, 275396872211456. https://doi.org/10.1177/27539687221145698

van Dijk, J. A. G. M. (2006). The Network Society - Social Aspect of New Media. In *Sage Publications* (Second Ed). Sage Publications Ltd.

Webster, F. (2006). *Theories of the Information Society* (Third Edition). Routledge.

Weibel, D., di Francesco, R., Kopf, R., Fahrni, S., Brunner, A., Kronenberg, P., Lobmaier, J. S., Reber, T. P., Mast, F. W., & Wissmath, B. (2019). TV vs. YouTube: TV advertisements capture more visual attention, create more positive emotions and have a stronger impact on implicit long-term memory. *Frontiers in Psychology*, *10*(MAR). https://doi.org/10.3389/fpsyg.2019.00626

Wikstrom, P. (2014). #srynotfunny: Communicative Functions of Hashtags on Twitter. *SKY Journal of Linguistics*, *27*, 127–152.

Zappavigna, Michele. (2012). *The Discourse of Twitter and Social Media*. Continuum International Pub. Group.