Development of Science and Technology
Towards the Formation of Participatory Spaces

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Abstract

The study of the development of science and technology cannot stand alone as a mere knowledge, the link between the development of science and technology has an impact on the formation of participatory space which is generally understood as a space for discussion or where individuals meet with their environment. This study explores and repositioned participatory spaces that are in ideal conditions and shifts into an illusion of reality and is able to shift participatory space that is material to the form of networked space that is directly related to the use of technology. The greater participation of the Buru Regency community in communicating on social media certainly can shape public sensitivity (sense of public). So that the community can monitor inequality and misappropriation which becomes bad behaviour and public services. The critical attitude of the citizens who are built in the alternative public space (in this case social media), is expected to encourage participation to jointly develop civil society. Where social and civilization systems are built based on moral principles that guarantee a balance between individual freedom and collective stability.

Keywords: Science, Technology, Space, Participatory, Public

1. Introduction

In social life, we often encounter changes in all aspects of life, including changes in the community itself, because basically there is no static society. There are always changes in society dynamically. Whether the change builds up in a positive sense or vice versa has a negative impact on society, the change is a consequence of technological innovation.

Science is an English word science, or Scientia (Latin). The Latin verb is scire, which means to know or know. What is science; a common and easy definition is a systematic body of knowledge. John G Kemeny: defines science as "All knowledge collected by means of the scientific method" (all knowledge gathered by scientific methods) so science is systematic knowledge.

Technology is simply defined as the application of science, especially natural scientific knowledge. Bunge defines technology as applied science. So science and technology are different but inseparable, there is a dialectical relationship. Science prepares supporting materials in the form of theories, on the contrary, the invention of technology broadens the horizons of scientific research.

Meanwhile, Information and Communication Technology (ICT) is a large umbrella terminology that covers all technical equipment for processing and delivering information, covering two aspects, namely information technology and communication technology. Information technology includes all matters relating to the process, use as a tool, manipulation, and management of information, while communication technology is everything related to the use of tools to process and transfer data from one device to another. Therefore, information technology and communication technology are two inseparable concepts. So Information and Communication Technology contain a broad understanding that is all activities related to processing, manipulation, management, transfer of information between media (Pusat Data dan Sistem Informasi Pertanian 2014)

Rapid developments in the field of communication have made experts call it a communication revolution. This rapid change is driven by the existence of various inventions in the field of technology so that what used to be an obstacle in communication activities, is now wide open. A person can relate to someone or a group of people without being

limited by time, distance, number, capacity and speed (Umanailo 2020). For example the use of satellites in communication. Everett M. Rogers in his book 'Communication technology' divides this communication revolution into four eras; 1. The Writing Era of Communication This era began in 4000 BC when the Sumerians used tablets made of clay, the Chinese found writing for book printing and the Koreans invented metal tools that replaced letters from the ground. The invention of the printing press was the beginning of the history of mass communication. With this printing press, long and complex messages can be delivered simultaneously to one or more large audiences. 2. The Printing Bra of Communication This era began with the discovery of printing equipment by Gutenberg in 1456. Even though printing presses began to be discovered this year, but the development of the newspaper took place around 1600. The first newspaper to be printed in Europe was the Aviso at Wolfenbuttel in Strahbourg, Germany in 1609. Then followed the Oxford Gazette in England in 1620. Other newspapers published in Europe were the Oprechte Haarlemsche Courant in the Netherlands in 1656, Einkommende Zaitung (1650) and Frankfurtes Journal (1680) in Germany (Umanailo 2019). 3. The Age of Telecommunications (Telecommunication Era) One of the technologies developed at this time was filmed. The history of film discovery lasts quite long because the film involves technical problems that are quite complicated such as optical problems, lenses, projectors, cameras and so on. In 1645, Kinscher used the Lantern to project drawings made for religious studies for his students. The historical development of the discovery of this film was only seen after the 18th century by experimenting with the combination of light with glass through a solid lens. Entering 1900 the Americans succeeded in making soundless films with a duration of 25 minutes such as the films 'A Trip to the Moon' (1902) and "Life of an America Fireman" (1903) (Kostoff and Schaller 2001). During this time the film experienced a golden period. Interactive Communication Era The era of interactive communication is marked by the discovery of various technological advancements such as Computers, Satellites, Internet and etc. The entry of computers into communication networks has brought about new facilities for communication, and still opens up the possibility for so many new opportunities in this field with the help of computers, not only is the storage, processing and tracking of information fast and reliable, but also the exchange can take place anywhere and anywhere.

2. Method

The research method is used in this research is a descriptive qualitative approach with the library research technique (Maxwell and Reybold 2015). This technique is used to analyze articles or journals related to the theme of writing (Williamson, Given, and Scifleet 2018), namely institutional factors in the context of public administration reform. while the results of this analysis are presented in tables and figures and descriptive qualitative analysis.

3. Results and Discussion

Space, in Michel Foucault's perspective, cones on the most fundamental of the practices of power (1984). Henri Lefebvre also stated that space is a dynamic social product and is formed by people who have control and of course domination overpower (1991). In connection with the space struggle, then John Gaventa sees space as a medium for citizens to influence political and policy decisions.

One thinker who developed the concept of public space, Jurgen Habermas, explained it from a political perspective. According to him the term "public space" exists to distinguish it from the concept of private space. Habermas's thinking about public space is divided into two, namely the concept of bourgeois public space (in his book titled The Structural Transformation of Public Sphere) and the concept of public space within a deliberative democratic framework that appears in the text Between Facts and Norms (Gill 2015).

Public space is Habermas's ideal picture of democracy. The principle which is considered good by democratic traditions is the value of justice, diversity, freedom, and solidarity. The concepts of justice and diversity mean there is a need for cultural pluralism and representation for so many public opinions, cultural practices, and various geographical and social conditions. Freedom and solidarity mean a form of sharing and cooperation that is not forced (Edgar 2006). This is for me the beginning of building trust between the local government and the community in Buru Regency.

In the midst of the times with the marked advancement of technology rapidly, including in the media industry, there are all the benefits and risks. All of this is a logical implication of the times. Lagging behind knowing and mastering technology will increasingly make us far behind from a civilization.

Nowadays social media is like a new medium in cyberspace that has found its momentum. The birth of internet technology has increasingly made the use of the social media boom. Everyone is proven to really enjoy sharing and hearing recommendations from friends and networks in cyberspace.

The presence of the internet has opened a new space, which is an "imaginary space" in which anyone can do anything that can be done in everyday social life in a new way (Jay, Habermas, and Lawrence 1989). This artificial way relies heavily on the role of technology, especially computer and information technology in defining reality so

that various activities carried out in it such as joking, debating, discussing, business, brainstorming, gossip, protesting, criticizing, playing, making out, making love, creating work art, can be done in cyberspace (unlimited public space).

In today's era of market and information globalization, it is difficult to imagine a political communication forum or stage that is free from market or state influence. Most seminars, public discussions, demonstrations, and so on are funded, facilitated, and formatted by large financial forces, whether business power, parties, or international organizations and so on. There is hardly a neutral locus of economic and political influence. As Winston explained above, there will always be economic, social and political reasons and economic and political forces in the development of media technology.

Habermas analysis, imagining complex society today as three major components, namely the market economic system (capitalism) (Jay, Habermas, and Lawrence 1989), the bureaucratic system (state) (Habermas 2019), and social solidarity (society) (Mezirow 1981), the locus of political public space lies in the component of social solidarity. It must be imagined as an autonomous space that distinguishes itself, both from the market and from the state. At least with the era of globalization and democratization, public spaces have been opened that are freely accessed by the general public.

Thus, with the opening of the public space, it can be used as a means to communicate to discuss or solve problems that affect the lives of many people. These spaces should be able to be utilized by all elements both between government institutions as well as civil society and government. We must be able to take advantage of existing opportunities to support democratization and the common good.

Civil society is not only actors or actors, but they are also producers of political public space itself. J.Cohen and A. Arato, give the characteristics of political public space produced by civil society, namely the existence of plurality (such as families, non-formal groups, and voluntary organizations), publicity (such as mass media and cultural institutions), privacy (such as morals and self-development), and legality (legal structure and basic rights). That means civilians can actively participate in creating the political public space to voice opinions, suggestions, and criticisms of the ongoing political system.

In a democracy, public spaces do not have to be formal spaces, but can also be in the form of informal spaces. The presence of the internet as cyberspace is able to open up democratic space because cyberspace is a world without authority. Users can express themselves in the face of their social life. When the public spaces that exist in the real world are difficult to form due to the dominance of the restraining power, then social media in the form of the internet is offering new public spaces. Every person has the right and freedom to speak out, criticize, and think about the social phenomena around him, including criticizing the authorities, because in this media is an open space which, according to Pilliang, is egalitarian (Piliang 2004).

A democratic system requires freedom of the press. With the existence of free space like this, it will make the internet as a medium of control over socio-political life. Because the media is one of the pillars of democracy, freedom of the press is the fourth pillar of democracy. Of course, freedom of the press accompanied by social responsibility. Utilization of public space, including cyberspace, is indispensable for launching democratization. The community should be able to make use of existing spaces to participate in development. But in reality, at this time the community is still unable to fully utilize the existing public space to be involved in development.

The ideal concept of public space is 1. Participation and non-discrimination; this means that public space must be an open forum for all. If anything, the public sphere must develop from plurality and diversity of opinions so as to create a market for ideas. We take one example like Facebook, now it has become a space of expression and media of interaction for individuals and communities of the Buru Regency community, this we can follow with a variety of topics and discussions in various writings and shares conducted. 2. Autonomy; a public space must be autonomous because an autonomous environment is conducive to critical and rational debate, where people can employ the full use of their mental abilities without fear. The people of Buru Regency are no longer difficult to express their aspirations or criticisms to the local government, this is proven by the opening of accounts belonging to SKPD leaders and public officials in Buru Regency. And this starts to become a dialectical phenomenon which later will become constructive discussion rooms. 3. Rational or analytical debate: this is the essence and essence of public space; This phenomenon becomes interested if later the results of discussions and debates produce innovative solutions and ideas for change and development towards development in Buru Regency. Discussion in public spaces should become a starting point in order to grow and develop it (Piliang 2001). Unfortunately in the reality of Facebook usage, there are still many individual ceremonies with status updates that are more personal in nature. This should be shifted to a more productive level.

The Public Sphere in the formulation which is idealized by Habermas is a discursive arena that is free from government and market interference where all citizens are involved fairly in a rational debate about the common good in order to reach consensus and democratic action. As Habermas explained, the structure and purpose of this

public sphere "protect against any economic and social conditions to give everyone the same opportunity to express opinions", emphasizing the protection of individual freedom from the force.

The Government of Buru Regency seems to continue to strive to open up these public spaces with the active involvement of various institutional accounts and public officials, this should be a means that must be used by the community if it then wants democratic development to continue to develop (Umanailo et al. 2019). And the success of public space does not only depend on the Buru Regency government but on the contrary the community's support to participate is the biggest contribution.

4. Conclusion

So the essence of digital democracy in the public sphere, the Internet brings in the convergence of text, audio and visuals in public dialogue in the public space of the Buru Regency community and increases lateral, interactive and discursive communication. This public space can be said to be a democratic space in building interactions and can also filter out a variety of opposing and supportive views. The people of Buru Regency must also be prepared to face the logical consequences of differences in opinion and analysis. Primordials should no longer emerge which will make the public space of Buru Regency people become the boundaries of the area of origin and interests and the regional government must continue to strive for the growth and development of public awareness to use public space as a means of exchanging information, learning and actualizing.

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Biography

M Chairul Basrun Umanailo is a lecturer at the Faculty of Agriculture at Iqra Buru University with specifications of rural sociology and research methodology. It has an M.Si degree in sociology obtained from March University. In 2016 Began doctoral education at the University of Brawijaya. Currently still completing a dissertation on the issue of urbanization because of village development that is focused on the Central Java region.