

Crowdsourcing System and Changes in Media Technology in Reshaping Distribution of Graphic Design Works

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Abstract: The development of the graphic design was strongly influenced by technological developments. From graphic design style, how to work to the way it is distributed. When digital technology and the Internet became known, changes also occurred in the field of graphic design. The presence of the Internet also encourages the emergence of a crowdsourcing system as a way to bring together clients and graphic designers. Designers also take advantage of these advancements to facilitate the way they work, but as a technology that always brings two sides as a result, the crowdsourcing system also has the same thing.

1 THE DEVELOPMENT OF GRAPHIC DESIGN

Graphic design is a general term for activities that combine typography, illustration, photography and printing for the purposes of persuasion, information and instruction (Livingston & Livingston, 1994). This definition shows that the graphic design field is very close to technology and its development is strongly influenced by technology. Graphic design is also often seen as a means of communication, including its relationship with the development of industries that play an important role in marketing factory production (Meggs & Purvis, 2012), thus also close to economic issues.

The development of graphic design can be traced thousands of years ago since the days of the illuminated ancient Roman script until the development of printing machines in Europe by Gutenberg in the 1450s and so on. But important developments emerged during the Industrial Revolution in England between 1760-1840, which was a radical change in the economic and social fields, including in graphic design. The Industrial Revolution created a breakdown and separation of the fields of creation and production of graphic design expertise into a number of field specialties (Meggs & Purvis, 2012).

Along with the development of technology in graphic design especially when phototypesetting

began to be commonly used in the 1960s, several special skills emerged, such as: graphic designers (who made page layouts); typesetter (which operates equipment for typesetting); production artist / paste-up artist (tasked with arranging all graphic design elements into a page); camera operator (who made a negative photo from a paste-up result); stripper (in charge of compiling these negative photos into one); plate maker (in charge of preparing the printing plate); and print operators (who operate printing machines).

But for the last quarter century in the 20th century and the first decade of the 21st century, computer technology (and electronics) experienced a very rapid progress. This progress affects many aspects of human life, including in the field of graphic design. Then in the period leading up to the 1990s, almost all of these tasks could be taken over by just one person with the help of computer graphics.

This development also occurred in Indonesia, before the entry of digital technology in the 1990s all design work was done with hand skills. From making illustrations, combining photos, lettering, layout to production preparation are all done manually. This requires special expertise and high skills from the perpetrators, for it requires formal education or experience to be able to get all these skills. Formally at that time education for the graphic design field already existed in Indonesia, such as at the Indonesian Institute of Arts in Yogyakarta or the Bandung Institute of Technology (Kardinata, 2015). Likewise for graphic design skills

in Indonesia which have had a long history of creating people who are experts in the field self-taught (Setiyono, 2004).

2 CROWDSOURCING SYSTEM PRESENCE IN GRAPHIC DESIGN

Graphic design experienced rapid development when computer graphics became known in Indonesia in the second half of the 1980s. The presence of desktop publishing and graphics software makes it easy for a new generation of Indonesian graphic designers. By the year 2000, more and more graphic design work had become increasingly dependent on computers. The influence of computer graphics technology has many influences in terms of design techniques and styles, accuracy and speed. The development of computer technology was followed by the development of information technology by the presence of the Internet. The rapid development of the Internet then opened up opportunities for graphic designers to find media to display and disseminate their works. Beginning with making e-magazine as a media display of works that are disseminated through a website (Bangsa, 2008). After that, other media began to emerge that had the opportunity to disseminate and become a place to sell their work such as crowdsourcing sites and portfolio / showcase sites (e.g. 99 designs, Design Contest, Upwork, Envato Studio, Sribu, Freepik, Deviantart, and so on).

Crowdsourcing is the process of getting services, ideas, or content by collecting contributions from a group of people, especially from online communities for a variety of activities. This term is a combination of "crowd" and "outsourcing" (getting something from outside / external) (Ghazali and Nadinastiti, 2015). The way the system works is quite simple: the site organizer invites designers to submit their designs for creating design contests for various graphic design needs such as websites, t-shirts, logos and so on. Then the client will choose the best design from the design that comes in and the winning designer will get a payment. The term crowdsourcing is often misunderstood by crowdfunding with different objectives, but the resources still come from the crowd.

The term crowdsourcing was introduced by Jeff Howe in 2006 in an article in Wired online magazine (www.wired.com/2006/06/crowds/). However, crowdsourcing activities were recorded as having

existed since 1714 when the British government opened a twenty thousand pound prize competition for those who could find the longitude counting method of a ship (Dawson & Byngall, 2012). Crowdsourcing is then more developed and known along with the presence of Internet technology. Howe (2009) calls the crowdsourcing system the beginning of human networking, and as predicted by Alvin Toffler in *The Third Wave* that society does not just want to consume passively, but they want to participate in the development and creation of products that are more meaningful to them.

Crowdsourcing represents the actions of a company or an institution taking a function that was originally carried out by permanent workers and freelancers to an undefined group of community networks and usually in large numbers in the form of an open call. Howe (2009) (Fuchs, 2014) says that crowdsourcing is one embodiment towards the democratization of capitalism.

Howe gave the initial example of crowdsourcing in the case of Threadless.com which was founded by Jack Nickell and Jacob DeHart in Chicago in 2000 who made an online t-shirt design competition. Every week they receive about a thousand design entries and winners are chosen by the designers themselves rather than by the board of jury. The winner will get a t-shirt with his own design. Threadless.com benefits greatly from this business with the cost of producing each t-shirt for US \$ 5 and they sell between US \$ 12 – 25. They also do not need to pay for designers, salespeople and advertisements because the community they own has done it all for free (Howe, 2009).

Fuchs said that the company's management thinkers had recommended to companies to transfer employee resources to users and consumers with the aim of increasing company profits by reducing labor costs. The outsourcing of work to consumers is a general tendency of contemporary capitalism. In addition to the form of open call, crowdsourcing is done by means of competitions, contests, image stock, or showcases. Facebook has asked users to translate their sites into other languages without payment, as is done by Google for Google Translate and Google Maps, and Trip Advisor. Pepsi held a competition with a prize of US \$ 10,000 for the best design from the Pepsi can. In such projects, most of the work carried out is not paid. Even if the winner receives money as prize, most of the work time used by users and consumers is completely unpaid, which allows the company to outsource paid work time to consumers or fans who work for free (Fuchs, 2014).

Crowdsourcing phenomena also occur in Indonesia, especially after Internet technology available and its access became easier. In Salaman village (near Borobudur Temple, in Magelang Regency, Province of Central Java) there is a group of self-taught graphic designers (there are approximately 1,500 people). They switched their livelihoods from the former laborers (laborers, farmers, public transportation drivers, and so on) to become graphic designers since getting to know computer graphics and Internet technology. By following the logo design contest on the crowdsourcing site 99design.com by working like an intermediary between prospective clients and designers, where in 2014 they earned approximately 45 billion Rupiah (around US \$ 3,700,000) in revenue. However, the process undertaken is not easy, because they have to submit designs of tens to hundreds of times per person (Arifin, interview, 28-29 November 2014). Until now they are still undergoing this activity as their main work because they provide earn more money than their previous work (Bangsa, 2017).

The Aqua mineral water company uses illustrations by Renata Owen – a 7th semester student at the time in 2014 – for the "40 Years of Aqua" series. Renata was 'discovered' by the Aqua agency through the Behance design showcase site. The illustration is valued at 50 million Rupiah (approximately US \$ 4,500), a lower price than if Aqua uses a professional agency, but the price is very high for a student. In 2014 Bayu Santosa (then 3rd semester student) won an alternative Maroon 5 album cover contest and earned US \$ 700 (around 7 to 8 million Rupiah when he won the contest) and tickets to watching the Maroon 5 concert in America but failed because the cost of transport and accommodation must be borne by himself (Santosa, interview, 11 April 2019).

Vinsensiana Aprilia Nanda Jeharu, an alumni of design department who became a freelance illustrator who joined the crowdsourcing site Upwork (www.upwork.com) got a job making digital illustrations for children's story books from a foreign client. One page of the illustration was valued at US \$ 5 and she had to make 15 pages (US \$ 75), and by her client the book was sold on the Amazon.com site as a US \$ 15 e-book Kindle digital book. As a freelance illustrator at Upwork.com, she must comply with the rules of the site, such as: unlimited design revisions. While the client has the right such as: disconnecting the employment relationship unilaterally without notification with the illustrator if it is considered unsatisfactory, and

giving a rating according to the service to the client. The existence of such regulations makes Vinsensiana must be careful in providing services to clients so that her membership account is not suspended by Upwork as she experienced when she joined the crowdsourcing site Fiverr. But Vinsensiana admitted that she was quite satisfied with the income earned and the way she worked so far (Jeharu, interview, 20 May 2019).

Even so, not all designers that the crowdsourcing system is a profitable way, because designers have invested their time, energy and mind but there is no guarantee that their work will be paid because they have to compete with thousands of other designers. In addition, crowdsourcing sites have never provided regulations that provide protection for designers, so that they potentially threaten the designer profession, there is also no guarantee of designs that are not chosen to be misused (Ghazali and Nadinastiti, 2015).

The crowdsourcing system has the same nature as the Internet, namely anonymity. "*On the Internet, nobody knows you're a dog*", according to the cartoon caption published in The New Yorker to point to Internet anonymity, as well as crowdsourcing as anonymous so that it never takes into account one's educational background, or experience (Howe, 2009). Therefore the existence of the crowdsourcing system also makes the boundaries between professionals and amateurs blurred. In his article, Howe (2006) exemplified the emergence of crowdsourcing with a professional photographer in California, who was frustrated because even though he had lowered the cost of his photography services, it still had to lose to iStockphoto which provides millions of photos at very cheap prices. The iStockphoto site is a royalty-free photo stock (as well as illustration, clip art, video and audio) provider with prices varying between US \$ 0.22 to US \$ 10 per photo with a collection of photos totaling millions of contributions from photographers all over the world. While the price of one photo from a professional photographer is US \$ 200 to US \$ 300 per photo. Anyone can send photos to this site regardless of their educational background, experience or professionalism. The same is true of the example of self-taught designers and academic designers who have no boundaries between professional, academic or self-taught.

3 TECHNOCULTURE IN GRAPHIC DESIGN

This study aims to examine the role of the Internet as part of cyberculture and its influence on the workings and ways of distributing graphic design works, especially with crowdsourcing systems, and how crowdsourcing systems are carried out by designers and the use of Internet technology. This circumstances like in accordance with technoculture theory which is referred to as an interrelation and dependence between technology and culture. The Internet – in this case – is considered as a new communication media, which can be seen as a cause of changes in the way of production and distribution of graphic design works. But it can also be seen on the contrary whether as a result of the development of the way of working and its distribution. Internet technology that is increasingly available easily and cheaply brings many conveniences in the field of graphic design such as: efficiency, speed, accuracy and flexibility. Therefore this study will also examine how the Internet plays a role in the facilities mentioned above.

This research is directed at the micro level and as a corpus of this research are local designers in Yogyakarta and around, who undergo the crowdsourcing system in their work in the field of graphic design between 2010 - 2018. As a comparison, research will be conducted on the response of professional, academic and self-taught designers to the crowdsourcing system. Therefore, this research will be expected to have different aspects compared to the cases of the crowdsourcing system at the macro level.

When Internet technology became popular, public of graphic design made use of its efficiency, speed, accuracy, and flexibility to try to escape dependence on patrons. This can be seen in the efforts of local graphic designers to showcase their work through e-magazine distributed through the Internet. There has been previous research regarding the relationship between the way Internet production and the way of distributing graphic design works, namely research that had been done by the author titled “E-Magazine as an Alternative Media for Spreading the Concept of Visual Communication Design” in 2008. This study explains the emergence of Internet technology that encourages young graphic designers in Yogyakarta to make their own access to distribute their work by loading it in an e-magazine uploaded on an Internet site (Bangsa, 2008). However, the problem of this research is that there are differences with the subject matter raised

by the author now. Although both discussed technoculture but here there are differences in the subject matter, namely: trying to release from patronage relations (2008), while in the proposed research this is more a shift from patronage relations to partnership relations. The research time is also different if it is related to the context of Internet technology development, namely when crowdsourcing sites have not spread yet (2008), and further highlights how designers display their work and later this model is similar to what is now known as a portfolio site or showcase.

The next paper was titled “Between Craftsmen and Designers” (2017) which was also written by the author. The object of this research is self-taught graphic designers in Salaman village, Magelang Regency who joined the 99design.com crowdsourcing site. Although it alludes to the relationship between the Internet and the crowdsourcing system, this research is different from the one proposed by the author now. The study focuses more on explaining the work methods of self-taught designers compared to professional designers and academic designers (Bangsa, 2017). In general, both studies revolve around the problem of the distribution of access to the Internet itself or the political economy problems of the distribution of Internet access.

To begin this research an explanation will be given regarding the field of graphic design and especially its relation to technological developments. Graphic design also evolves in accordance with the development of technology according to the division of human history into three periods according to Alvin Toffler (1980): agrarian revolution (first wave), industrial revolution (second wave), and information revolution (third wave). Technological developments in graphic design were presented in the world graphic design history book by Philip B. Meggs and Alston W. Purvis “Meggs' History of Graphic Design” especially in the discussion of the Industrial Revolution and the impact of industrial technology on visual communication. Whereas in the next section the book discusses the Age of Information and graphic design in a global village, and at the end is about the Digital Revolution.

The Digital Revolution cannot be separated from the role of computers and the Internet as part of cyberculture. One result that arises from the existence of Internet technology is the crowdsourcing work system. There was a study about crowdsourcing conducted in 2016 about the crowdsourcing system carried out by Panca Siwi N. in title “Community Participation in Jogja

Rebranding (Case Study: Community Political Participation in Jogja Rebranding through the Jogja Urun Rembug Forum)". The study discusses the role of the Yogyakarta community in responding to and determining the new logo for the rebranding of the city of Yogyakarta. The findings of this study are that the crowdsourcing system in the case of rebranding the city of Yogyakarta is more of a community-based mutual cooperation activity for the image of the city without hoping to get rewarded. Whereas the present research is more on how designers work with a crowdsourcing system with the aim of getting at least cash in return.

The crowdsourcing system itself is considered to be imperfect, and even some people prejudice the system. The Indonesian government during the time of President Susilo Bambang Yudhoyono through the Ministry of Tourism and Creative Economy mentioned the shortcomings of this graphic design crowdsourcing system, although very little in the 2015 - 2019 National Design Development Plan. It is said that the crowdsourcing system is a new form of business model where clients can asking from many designers to fulfill their request.

The existence of a crowdsourcing system cannot be separated from the role of the development of Internet technology. The presence of Internet technology then made crowdsourcing more known and developed. Regarding the network explained by Martin Lister (Lister, et.al., 2009) in the book *New Media: A Critical Introduction* as one of the properties of new media (in this case the Internet), namely: networking (besides digital, interactive, hypertextual, virtual, and simulated).

The use of graphic design work from crowdsourcing sites has also been written in a journal entitled "Encouraging Better Graphic Design in Libraries: a Creative Commons Crowdsourcing Approach" by Veronica Arellano Douglas and April Aultman Becker (2015). This research only focuses on the ease of obtaining graphic design works to provide convenience for library information systems. But in this study it can also be seen that users can fulfill the needs of graphic design works by utilizing Internet technology. The case study in this study examines an approach to improve the quality of graphic design in a library. Through a combination of social media and cloud-based storage that can be accessed, and utilizing freely available graphic designs to be used under a license that can be shared.

Research on the role of the Internet and its influence on the workings and ways of distributing graphic design works with the crowdsourcing

system, as well as how the crowdsourcing system is carried out by designers and the use of Internet technology are still rare. It is hoped that this research can find out how the role and influence of the Internet on the workings and ways of distributing graphic design works, as well as the relationship between patrons and actors. Thus it can be seen the difference in conditions between before and after Internet technology is present.

Technoculture consists of two words: techno (logy) and culture. Donna Haraway calls 'techne' (as long as the word 'technology') as 'a technique that can be translated or transferred'. Culture is the result of syncretism and hybridization of cross-space interactions and is increasingly considered a route made rather than having roots. Culture is a collection of temporary and interconnected combinations of the local on the global (Barker, 2004). Raymond Williams as quoted by Slack and Wise (2005) considers many historical and contemporary meanings about culture, including the implications of caring for or processing (as in agriculture); the difference between humans (culture) and material reality, between symbolic (cultural) production and material production, between culture and society, between culture and structure; attribution has something special when someone is cultivated; designation of separate popular culture as opposed to high culture; characterization of national differences (as in the culture of two different countries); and naming related subgroups or subcultures in national culture (such as in large cities or rural areas in a country).

Raymond Williams also said that culture is "the whole way of life", which means the formation, arrangement, and organization of what we think, believe, value, feel, and do. however culture is not static, but is a process of changing relationships between old, new, and reconfigured or re-articulated. On the one hand culture is formed from traditional works: meanings, values, artifacts and practices that are derived from previous generations or other parties. On the other hand culture is shaped by selected works: the selection, challenge, arrangement, and life of artifacts and ideas in everyday life in interactions with changes in material conditions. Thus culture is a process in which tradition is reconfigured in historical conditions in everyday life. In the process of change, culture will express dominant things (values, feelings, beliefs, etc.), but also bring things that are residual from the previous time or social formation, as well as emergent things from ideas and new process.

While the term technology itself is a term that is not easy to get its definition appropriately. According to MacKenzie and Wajzman (1985) (in Bijker, et. Al (eds.), 1989), there are three layers of understanding that can be distinguished from the word "technology", first, there are levels of objects physically or artifacts, for example: bicycles, lights, plastic. Second, "technology" can refer to activities or processes, such as: the manufacture or casting of steel. Third, "technology" can refer to what people know about what they can do, for example: "know-how" to design bicycles or operate ultrasound devices at obstetric clinics.

However, technoculture discussion is not the same as when discussing technology alone or culture itself only, technology is an integral part of culture (Slack and Wise, 2005), so there is no term "technological age" as we call it: Stone Age, Bronze Age, Iron Age, Industrial Age, Information Age and Digital Age. Human culture is always present in relationships that we understand as technology (stone, fire, clocks, computers to nanotechnology for example). Technoculture is defined as the interrelationships and dependencies between technology and culture, where technology is considered to contribute to forming culture and society (technological determinism) (Bell, 2007) and on the contrary people are considered to play a role in shaping technology (cultural determinism) (Slack and Wise, 2005).

Slack and Wise (2005) call technological determinism meant that technology is understood as having an effect and that technological change is the main determinant of cultural change. Landong Winner (in Slack and Wise, 2005) explains that technological determinism is believed to depend on two hypotheses: (1) that technology is central to defining what culture is; and (2) that technology causes effects and that technological change is a major cause of cultural change. On this issue technology is the cause. Whereas the opposite is cultural determinism, namely: culture is understood as a cause and technology is as a result. Technological determinists argue that scientific advances are driving technological progress, but social determinists say that strong social elites (military, bureaucrats and corporations) play a changing role (Green, 2002).

The discussion of technology and culture can not be separated from the influence with matters of policy (authority) and the structure of society. Our lives are inseparable from one or more of these things, so discussing technoculture is also about doing activities between: culture and society,

technology and policy (Green, 2002). In this case the focus of technoculture that is discussed is about cyberculture and the Internet, which one of the effects is to the world of digital communication centers.

Talks about technoculture involving society, technology, policy and culture also include talking about 'neutrality' in technology, public interest, popular culture, regulation, gender, modernism and postmodernism, and the nature of the information society. There is a cycle that works here: culture creates new communication technologies, which are then put together as technoculture, which then encourages further technological discovery (Green, 2002). Electricity, apartment buildings, fabric factories may have technocultural elements, and can be called technoculture. The balance between techno (-logi) / culture might be more developed so that electricity is more technological, and synchronized swimming becomes more cultural.

Slack and Wise (2005) divide the response to technology into three: (1) Ludism; (2) Appropriate Technology (AT); and (3) Unabomber. Ludism is a term for Luddites who are anti-technology and anti-progress. They are referred to as machine haters, anti-technology, anti-progress, anti-development and anti-life are established. Ludism refers to a movement of skilled workers in England in 1811-1817 in the textile industry. They damage (or precisely sabotage) weaving machines because they believe that the machine will replace the role of the workers and make them lose their jobs. But according to the EP. Thompson explanation, in his book "The Making of English Working Class" that these Luddites are not entirely anti-technological, they only want that "industrial growth should be arranged according to ethical priorities and profit seeking must be below what is needed".

Those who accept technology as Appropriate Technology are about making technological choices that oppose the development of technology for technology, or for the benefit of sacrificing quality of life. In his manifesto Ted Kaczynski aka Unabomber (as FC / Freedom Club) mentions human transformation towards the need for machinery, environmental transformation, and damage to human dignity and autonomy. These three responses represent: (1) fear and anti-technology; (2) cooperating and utilizing technology; and (3) misusing technology.

Technology is political economy, therefore technology is political because it can be used for political purposes but also technology is economical because it can be used for economic purposes.

Technology is not an element that is taken and used for a political system or economy, not also technology creates a political and economic system, but technology is an integral part where politics and economics are displayed or in other words technoculture is political and economical. The next task is to examine how certain sets of technologies from technology, politics, and economics are built, what work they do, and how they can be changed. Politics is a term relating to the relationship between power and agency. Whereas economics requires the production, distribution and exchange of resources, which include human resources (for example, labor), natural resources (eg. copper), and information resources (for example, knowledge) (Slack and Wise, 2005).

Jameson followed Ernest Mandel who divided capitalism into three periods which happened to coincide with three stages of technological development: (1) industrialization using steam engines which began in 1848; (2) electric machines and internal combustion engines (ICE) began in the 1890s; (3) electronic use and nuclear power since the 1940s. These three stages of technological development are in accordance with the three stages of the evolution of capitalism: (1) the stage of market capitalism / stage of the market economy which is limited to the territory of the country; (2) the stage of monopoly or imperialism in which capitalism is extended to other regions; (3) the final stage of capitalism in which the region no longer becomes relevant or multinational capitalism which is often misunderstood by post-industrial. Jameson connects these three stages of capitalism with three stages of cultural production: (1) the stage of realism; (2) the stage of modernism; (3) the stage of postmodernism [(Jameson in Durham and Kellner (eds.), 2006) (Jameson, 1991)].

4 CONCLUSIONS

Technology advances cannot be avoided, including in the field of graphic design. Technology is indeed made to help and make it easier for humans to carry out their work processes. But technology always brings two sides: benefits and threats. In the case of crowdsourcing system on graphic design on the other side made it easier for graphic designers to distribute their work while freeing them from capital patrons as they were before Internet technology was known. But on the other hand problems arise, namely the blurring of boundaries between professionals and amateurs, and pseudo-freedom

when graphic designers think they are liberated from capital patrons but in reality they are under a much greater power of capital. It takes a strong role from the government as an intermediary between these graphic designers and clients who are able to create an equal relationship.

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