

Graphic Visualization in Printed Media: How Does the Use of Technology Influence Journalism Culture

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ABSTRACT

Technological change has changed readers' desire to get news information. Present generation readers prefer to read more efficient news. Visual communication through infographics accompanying a news story becomes an effort that printed media take to fulfill consumer need to understand the news content faster and easier. Competing with other media, newspapers definitely try to provide completeness of news content to readers. It is now prevalence for newspapers to use graphics to explain or visualize news story. Graphics visualization which could be sketch, maps, or chart will give added value to news story and could help readers to understand news content faster. Technology makes it possible. Different from old-fashioned newspapers, today's newspapers are more colorful. It affects journalists' value and practices. When the habit to read news story is shifting to be more visual, is journalism culture shifting as well? Journalists are supposed to prepare detail materials to make graphics visualization more accurate by using technology. Will the trusted values and journalism practices also change along with the shift of news content that is more visual? How the use of technology influences journalism culture is the focus of this paper. This research explains how technology had changed part of journalism practices, especially in visualization graphics. The facts that in the past were illustrated through text narration and pictures, are now illustrated through infographics. Journalism culture has changed.

Keywords: *Technology, news, infographics, visualization communication, journalism culture.*

INTRODUCTION

Technology has changed the way people read news story. It becomes faster and more efficient (Pinto, 2017). Responding to such condition, the landscape of media also changed. Technology development has changed the appearance of media by adding graphics to visualize news story even though still using text narration (Holton, Lewis, & Coddington, 2016; Küpper, 2015, 2014; Weber & Rall, 2016; Ghode, 2012; Schlichting, 2016). The visualization has some functions such as to communicate complex data (Wojtkowski & Wojtkowski, 2002 in Segel & Heer, 2010), to illustrate, and clarify complicated data (Holsanova, Holmberg, & Holmqvist, 2008). Sometimes a news story looks rigid, then it needs visualization to give emotional touch (Hanser, Kevitt, Lunney, & Condell, 2010). In present days, visualization is also important to shape meaning (Weber & Rall, 2016). The other functions of visualization are among others to depict news story, to support news story, overview function, and decorative function (Volsdal, 2011). Visual also has the role of telling, explaining and persuading (Normah & Faridah, 2018). Long news story will be apprehended easily when it was visualized infographics. With such visualization, people could figure out and imagine easily the story. Therefore, in some cases, the content of

visualization should be prepared carefully. The information content of visualization could be text and its variations, pictures, and graphics (Holsanova et al., 2008). Visualization can also emphasize point or value in the news story. In other words, infographic communicates data to public visually.

Graphic is not just a matter of aesthetic. The content of graphic also has to really describe the news story. Hence, the making of journalism graphic should involve the journalist as a fact finder. It is the result of a close collaboration between a graphic designer, an illustrator, and two journalists (Weber & Rall, 2016). The involvement of journalists is needed to describe the story that will be visualized. It is an interesting thing when readers now prefer visualized news story. And the question for this paper is whether journalism culture is also shifting to be more visual with infographic. Visual designers will carry out the making of graphic, but the material comes from journalists. If journalists have realized the change in community, there will be a change in journalism.

In the past, journalists wrote news stories with text and explained some events through text narration. Does technological change make the habit change? It is interesting to research whether technological development has shifted journalism value and practice or cultural journalism. That is the main question in this paper.

LITERATURE REVIEW OR RESEARCH BACKGROUND

Journalists are also driven by their journalism values when doing their jobs. Hanitzch (2007) called it as journalism culture. When technology is growing fast and changes media behavior that prefers visual appearance, then journalism culture should change as well. In the past, values in journalism among others are factualness, completeness, and accuracy (McQuail, 1992). In digital era with overwhelming news (Renjith R., 2017), news could be various. In such condition, definite guidance is needed. Sambrook (2012) said that digital era faced many challenges and so objectivity could mean different in the past and the present days. Sambrook mentioned some principals, i.e. evidence, diversity of opinion, and transparency. Evidence will make public decide by themselves. To ensure public about real description, a journalist has to be in the venue of event and visualization could help. With such visualization, public could see the description about factualness, completeness, and accuracy easily. In this era, news visualization is as important as news itself (Ghode, 2012). News visualization is even an effective form of journalism content (Schlichting, 2016). Infographic is visual representation of information (Ghode, 2012).

The facts that journalist found has to be informed in visualization. Visual interpretation of the designer will enrich the research (Weber & Rall, 2016). In the making of infographic, the relation between journalist and graphic designer is very important (Cartwright, 2010, (Volsdal, 2011). Visualization is not just attachment but part of idea, concept, and communicated words. Hence, visualization is an integrated part of meaning formation. News value in a news story could be visualized into info graphics. Therefore, the making of infographics needs supportive journalism culture which comprises value and practice of the journalist (Hanitzsch, 2007). The value and practice that will be discussed in this paper are factualness, completeness, and accuracy (McQuail, 1992) which will be shown in infographics. The form of infographics could be various. Volsdal (2011) says that there are two big categories, i.e. statistic like a table and illustration. In some cases, news visualization could be a comic. Although either graphic journalism or comic journalism tell news story in

pictures and text, they both are two different things (Schlichting, 2016). The forms of infographics are closely related to technology development (Pinto, 2017).

Image sharing is an inevitable part of social media which made a shift on the way we connect and communicate one another (Russmann & Svensson, 2017). Russman & Svensson also considers visual communication as something unique to complete text data and help readers understand the news content easier. Visual language gives more significant impact (Ibrahim, Nuraeni, Ahmad, Kee, & Mustafa, 2012), and its role in journalism will probably be bigger. This visual communication is now also commonly used in journalism. Part of news message is delivered visually through infographics. Journalists could emphasize which news stories need infographics and with what data. According to Hilligoss (1999), visual communication is also a part of writer job since visual element of the text will influence the way how the readers interact with words.

METHODOLOGY

The research on graphic visualization that emphasizes journalism culture influenced by technology uses qualitative approach with case study. Case study will answer a question how to track down contemporary events. This case study allows the researchers maintain the holistic and meaningful characteristics of real events (Yin, 2009). The case in *SuaraMerdeka* daily newspaper was chosen because *SuaraMerdeka* is one of few old existing newspapers in Indonesia. This newspaper was first published in 1950 and still exists until now. It is so appealing to scrutinize how technology development influences journalism culture of *SuaraMerdeka* in the making of infographics in the recent years. This newspaper also won several awards for front page cover from Indonesia Print Media Award (IPMA), among others are Silver Winner 2015, Gold Winner 2016, Silver 2017 and Bronze Winner 2018. Data was collected through in-depth interview since interview is an essential way in case study (Yin, 2009). Interview were conducted with some sources in July-August, 2018, and each interview took about 45-60 minutes. Interview was also conducted via e-mail and WhatsApp messenger. The interviewees are editors-in-chief, journalists, and artistic designers. In-depth interview were conducted to dig values and practices that journalists trust and do. Meanwhile, interview with many sources were conducted to get comprehensive results other than to triangulate data from sources. The other data sources are documents that could be found at document center of *Suara Merdeka* to observe old newspapers published in early 1950s and the years after until present time. The researchers observed news stories using graphics for visualization so they could be matched with interview results.

Table 1: Informants.

Name	Position	Code
GunawanPermadi	Editor-in-chief, 2016 till present	Informant 1
Hendro Basuki	Editor-in-chief, 2010-2012 and 2015-2016	Informant 2
Amir Machmud	Editor-in-chief, 2012-2015	Informant 3
Sasongko Tedjo	Editor-in-chief, 2004-2010	Informant 4
Putut Wahyu	Chief of Preprint Department	Informant 5
Toto Tri Nugroho	Chief of Artistic Division	Informant 6
Sri Humaini	Journalist, 1973-2008	Informant 7
Aditia A.	Editor	Informant 8
Arif Widodo	Journalist	Informant 9
Agustinus Ari	Journalist	Informant 10

Bayu Setiawan
Ilyas

Journalist
Journalist

Informant 11
Informant 12

RESULTS AND DISCUSSION

Infographics, Function, and Form

All editor-in-chief said that infographics were important and the form should be adjusted to technology development. In general, they explained that the purpose of infographic was to help readers understand news content easily and for page aesthetics. However, the policy of infographics is developing along with the development of technology. The sources realized that there were some functions of infographics. In the past, it was just used for decorative function but now it becomes integrated part of the news story itself. The functions of infographics that showed up from interviews with sources are: to enrich news story, help readers understand news story, show news history, summarize news story, and facilitate readers who did not have sufficient time to read whole news text narration. Infographics show the points of news essence and represent pattern of information presentation which is expected by millennial readers or Z generation who prefers visual access to textual access. Infographics make news page more attractive and eye catching so that readers will be more interested to notice the page. The policy of infographics taken by Editors-in-chief of *SuaraMerdeka* is adjusted to those functions. All complicated news stories could be simplified with infographics to make it easier to be understood. Informant 2 mentioned a number of infographics functions. "News story that needs completeness, explanation, and balance should be accompanied with infographic illustration to give nutrition of complete knowledge to the readers". Meanwhile, Informant 3 said that infographics were needed in headline news stories that were considered more important and strategic than other news stories:

When I was editor-in-chief, I ordered that infographic was compulsory part to endorse headline news story on each front page and on other strategic pages. There are news stories with character that need infographics, such as economics and sports. A news story needs infographic when it is expected to have a large impact. News story about someone who is elected as a president, a governor, or a sport champion needs graphics that could show his or her achievement, career journey, and important things in his or her life (Informant 3).

On the other hand, Informant 1 said that infographics was actually used in many media platforms, including online media, so that is why printed media have to struggle to give added value. "From the content perspective, printed media also have to compete. Infographic used to be an added value of printed media, but now online media provide infographic as well. That's why we have to improve the quality of infographics".

The interviews with Editors-in-chief from 2004 until the present time (2018) shows that there is a policy to add graphic visualization. Newsroom meeting always emphasizes the policy to editors and journalists. If a journalist doesn't send data needed to make visual graphics yet, editors will ask for it. For headline news, especially in the frontpage, newsroom meeting will decide what kind of graphic will be composed. Editors will even give direct guidance to the artistic department. Editor will ask journalists to complete the data and remind them that a news story must be complete. Journalists have to try to make readers

understand the news story easier with giving brief illustration through visual graphics. Either editor-in-chief or journalist realizes the importance of infographic to communicate news story to reader. All journalist informants said that public likes infographics. Infographic is needed due to many functions. That is why they try to add as many data as possible to make infographic, as Informant 9 said:

Infographic is now a must. It helps people digest a news story and people prefer a news story with complete illustration. Graphic not only illustrates but also amplifies and embellishes a news story. In the future, conventional media could count on infographic to survive when competing with online media.

Informant 11 told a similar opinion: "I think people like infographic because it makes the page display more interesting and the news story will be understood easier." And so did Informant 12: "Love it very much. A news story with graphic will help reader understand the content". The interviews show that the journalists send data for infographic almost every day to complete their news stories. As Schichting (2016) said, news visualization is even an effective form of journalism content. In other word, infographic is visual representation of information (Ghode, 2012).

The form of infographics in *Suara Merdeka* daily newspaper is much influenced by current technology. After observing *Suara Merdeka* pages, especially the front pages, at Document and Data Center, we can notice that in early publication in 1950s, the newspapers were printed black and white without graphics. News was presented through text and sometimes with only few pictures. The display was very simple. Before 1980, there was not much visualization through graphics and news was presented through narrative story. Informant 7 said that when she began to work as a journalist in 1973 there was no infographic in newspaper due to lack of graphic technology. Newspaper printing at that time still used hot lead typesetting technology. "Printing technology at that time still used hot lead letterpress method and sun ray is needed to print a picture. If one day there was no sun ray, there was no picture in the newspaper on that day. So there was no graphic visualization yet at that time" (Informant 7). Journalist implements 5 W + 1 H (who, what, when, where, why and how) directly and at that time the size of page was still 9 columns 540 mms. With that wider size, journalists can freely describe their news stories through their narration. Since 1980s, *Suara Merdeka* had been using computers with graphic capability such as simple tables. Journalists were asked to add data to make tables later on. In 1990s, *Suara Merdeka* pages were more colorful and contained many pictures plus infographics. Informant 2 also said that technology development influences newspaper performance: "Infographic in *Suara Merdeka* is influenced by the development of information technology. In 1970s and 1980s, the graphics to illustrate news story were hand drawings with semi-caricature approach, meanwhile the graphics in 1990s were influenced by computer digital features."

Major changes occurred since 2000s until the present time. With smaller size of page, 6 columns 540 mms, the news stories become shorter. The pages are divided into national, sports, economic, and local news. Journalists have to take special time to collect data for infographics while interviewing sources. The data could be: (a) map: location of event with wider zoom; (b) detail map: location of event with detail zoom; (c) chronology:

sequence of events in certain period; (d) table: consists of important data, could be comparison by year or other comparison; and (e) key points: news description through pictures or mixture of infographics and pictures.

In the recent years, graphics had been more important, especially in front page. Latest technology can make infographics with full color and features. News visualization in infographics is combination of pictures and other supporting materials that makes news story and infographics as one. In other words, in the past infographic was just a complement to news story in the past. It could be a table or other simple graphics. In the following years, it could communicate the news by combining picture, text, and other data. It helps reader understand news story.

Editor-in-chief sources emphasized the importance of infographics. Due to media landscape change, the way how to educate journalist culture is also different. They implemented the visualization values in journalism practice. Informant 3 said that journalists were suppliers of graphic data. It was a part of their job so they were supposed to prepare infographic points to complete their news stories. This work pattern is a part of news accountability and verification. Informant 1 explained that information was a mixture between data and visual art. That is why a journalist has to adapt that condition. Responding to technology development, the value and the way a journalist produces news story must change.

For instance, in the past a journalist was only needed to come to venue of event, collect data, and write news story. But now such work pattern is not enough because it will be left far behind by online media and social media. A journalist has to look for continuation of news and make such a review. A journalist also should be a researcher. Graphic visualization is also developed (Informant 1).

Informant 4 explained almost similar thing: "Besides conventional pattern of 5Ws + 1 H with emphasis on "why" and "how", reference and data completeness also become a must because interpretation to an event should be comprehensive."

Technology with more sophisticated software makes the making of infographic easier. Data sources could be searched via internet. It depends on the creativity of journalist and graphic designer. The values that will be emphasized are data completeness, guidance to apprehend, and attractive presentation in layout. Infographic was made to complete headline news, in-depth news, and news story that needs table or chronology of events.

How is the process? Either editor or journalist can propose infographic. For front page or main page infographic, the proposal is usually submitted in a meeting of news budgeting. The meeting will discuss about the news development and other things, including form and content of infographic. Informant 8 explained that request for infographic sometimes came from editor who thought that certain news story needed infographic. Data for infographic could be ordered in the morning or few days before in order to have more intensive preparation, either for data selection or infographic form. However, in crucial or unpredictable events, the infographic data are gathered at that moment. In some news, sometimes data for infographics is provided by Suara Merdeka Data Center.

The Artistic Department then process the data received into infographic. In the other way, a journalist could propose for infographic by herself/himself. She or he could imagine whether news story that she/he will write needs infographic or not the journalist will attach the infographic data while sending the news story and then editors will consider the infographic proposal. If the editors accept it, they will order Artistic Department to process the infographic data.

Interview with Informant 5 shows that *Suara Merdeka* has implemented infographic earlier since 1992 with desktop publishing. Infographic should be in line with the spirit of newspaper and the news type as well. Graphic emphasis will also consider the vision and mission of media. Infographic in *Suara Merdeka* was divided into some sessions, i.e. national pages community, and sport & entertainment pages. Each session has different characteristics so that the emphasis of messages in infographics for sports is different from infographics for entertainment. Informant 5 said that his department produces on average 10 infographics for various pages every night. However, in certain big cases, infographic is attempted to merge with news story.

I compare infographic to cone ice cream. Both cone and ice cream could be eaten altogether. Infographic and news story could also be enjoyed as a whole (Informant 5).

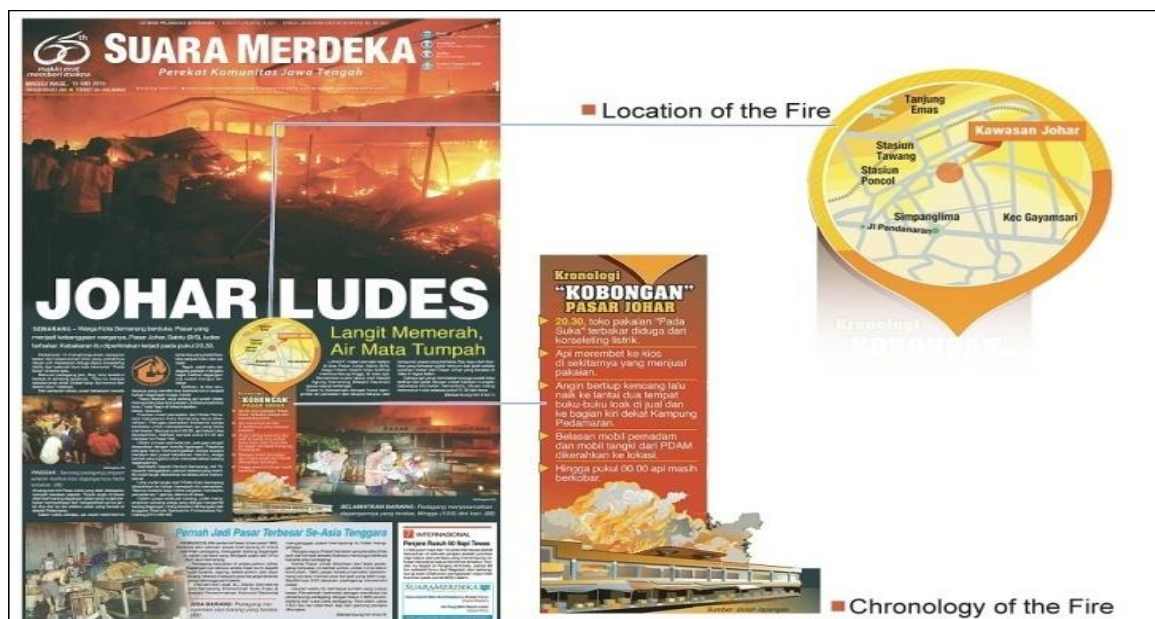


Figure 1: Frontpage cover of *Suara Merdeka* Newspaper (May 10, 2015) showed huge fire at Johar Market Place, Semarang, Indonesia. Infographic on the zoomed picture (right) consists of chronology of the fire and location of the market. This frontpage cover won Gold Winner in Indonesia Print Media Awards 2016. (Source: Data Center of *Suara Merdeka*).

Informant 5 also said that in the front page cover that won Gold Winner in Indonesia Print Media Awards 2016 for 2015 performance, there were complete news stories, including hard news and feature news, with pictures and infographics that emphasize the news value. Meanwhile, Informant 6 explained about the importance of communication between journalist and infographic designer.

Before composing infographic, the graphic designer should read the news story first to imagine the event and determine the design. There is sometimes a guidance to compose infographic from the newsroom meeting attended by editor-in-chief, managing editors, and editors.

Informant 5 said that cooperation between graphic designer and journalist is very important to transform data into infographic. Artistic division also has to update. To interpret text to infographic, designer will read the news story first, especially for front page or infographic that needs special treatment. Artistic Department also arranges infographics which could explain effectively the news content. Creativity in selecting color, picture, and other elements also helps communicating the news message. Some editors-in-chief said that infographic is not only used as decorative element but also contributes in communicating messages or in this case news content. Infographic is also defined as a medium of visual communication to illustrate or explain news facts to the readers. By seeing infographic, the readers can understand the news content easier and faster

Journalism Culture

While the previous part discusses about editorial policy and infographic process, this part highlights the value and practice taken by the journalists related to infographic. The value and practice of journalist is journalism culture. The values that were observed in this paper refers to McQuail's factualness, completeness, and accuracy. Due to technology development, journalists regard the values a little bit differently. The instruction from editors to search more advanced news and analysis makes it different from online media and social media. Interviews with editors-in-chief show that the leaders try to implement professionalism values, such as accuracy, objectivity, etc. They also realize that technology development has made change of values. That is why they have to update values. The journalists also realize the change. The values will be shown in graphics they make.

Some journalists also realize the importance of infographic even though newsroom sometimes orders them to prepare it. They said that there were some news stories that need data to compose infographic, i.e. news that has broad impact, headline news, trending news, news with quantitative data, and complicated news. The imagination of infographic has showed up and technology helps them to get supporting data.

A journalist is also a researcher because news story is a part of scientific work. I want to give data as comprehensive as possible to readers. Don't let the readers understand the news partially (Informant 12).

Informant 11 had the same opinion: "Technology makes data collecting for infographics easier. Just click, data we need will show up. Journalists should check and recheck data from sources to ensure accurate and reliable graphic data". Journalist said that graphic content consisted of key points that emphasize the news, chronology of events, data year by year, and other important data. Professional values such as accuracy, completeness, and objectivity will be also implemented in the graphic.

In the past, some journalists assumed that it was enough for them to observe the fact before their eyes and interview sources on the scene. But, for the time being, public will probably make comparison to online media by searching for similar events or the

connection of the event in the past. That's why journalists should look for comparative data or other completeness data and then the data will be visualized into infographic. Aware of that importance, they will gather data for infographic whenever they cover event with high news value. In sorting data and selecting infographic form, the journalists will consider the news value or emphasize the important points of the news, definitely by observing the event directly on the scene. For instance, they will choose chronology of events if they consider time value, or they will choose map if they consider the location as the important thing. This journalism value and practice are always emphasized to the journalists. As mentioned before, when people need effective information visually, the values will be implemented partly through visual infographic. Media, in this case *Suara Merdeka*, educate journalists through journalism trainings, newsroom meetings, and communication between editors and journalists. For instance, editors will ask journalists to get used to complete data for infographic. Journalists will gather data easier if the practice becomes a habit. Journalist also has a role as a researcher for happening events.

However, the journalists don't attach infographic data to all news stories, only to headline that have big impact. Besides knowing which news story needs infographic, they also could imagine how the infographic will look like and what data will be chosen for graphic, whether they will make map, data table, or comic. Infographic doesn't repeat news content, so that's why they have to arrange and design the content carefully, as Informant 9 said: "A news story doesn't always need infographic. It is needed to support big news with crucial points. I prepare infographic to every news story that is expected to become a headline news story. For instance, a big case story that has broad impact to public usually needs table or maps". Graphic making has become culture or habit among *Suara Merdeka's* journalists, especially those who think that their news stories will become headline ones. Desire to give completeness, accuracy, etc through infographic also becomes their habit, as Informant 10 said. "For instance, when we're covering road construction, we would try to complete the news story with construction data". Some journalist said that they had to choose data for infographic first. They also understand which news story needs infographic. For example, a news with big data that is relatively difficult to be described into text. Informant 10 said "I choose raw data for infographic, minimize data duplication, arrange data, and then write data sources". While Informant 9 said that data could be inserted to news structure and then the points of news could be transformed into infographic.

Accuracy will be shown in the data. For instance data of car accident are the number of cars, location of event, and color of vehicles correct. So is the chronology of event. After collecting all data, the next job is processing the data by artistic designers. They are supposed to know news values to avoid misinterpretation when they will make the visualization of the news story.

The values of factualness, accuracy, and evidence are implemented in the process of rechecking, while completeness value is implemented in searching information from sources. The making of infographic also needs check and recheck process, as said by Informant 11:

Check and recheck from sources are needed to ensure accurate and reliable graphic data. Data creation for infographic will also increase news accuracy because when we gather data, we will check the data one by one.

Data creation cannot be separated from the fact. Journalist has to gather data on the scene, interview sources, and observe directly. Journalist will then implement check and recheck procedure to ensure news accuracy. The interviews with journalists also show their different behaviors. The elder journalists only wrote text narration and didn't think about infographic data because the technology was unable to make graphic at that time. That's why, capability to make narrative news story was very important for journalists. Informant 7 said:

We just had to write news story, no infographic. That's why, now I like to read news stories with graphics. In the past, I didn't even think about creating graphic data due to lack of technology. We gave explanation as detail as possible through news story narration to make the readers understand.

The process of making news story was conducted by searching for data from the event and then writing the data completely through text narration. In the present time, the procedure has shifted. Young journalist now always thinks about data for visual infographic. The narrower page of present newspaper makes text narration shorter. More pictures and infographic help readers understand news story visually. Now, journalist makes a map instead of telling about the place through text narration to explain about location.

The situation changed since computer graphic technology was introduced and it changed radically at the present time when latest technology can compose various infographic. Media rivalry also becomes another reason. The tasks of journalist of printed media are not only writing news story and taking picture, but also capability to collect data for infographic to visualize news story. They even said that sometimes a researcher gave complete data about some events. News visualization will also consider the type of news. Visualization on economic news is probably different from visualization on law news or sports news. Values of completeness and accuracy are also developed in the current journalism culture. Infographic, which in the past was only considered as decorative, is now also considered as a way to check news accuracy and completeness.

How do the journalists maintain completeness value through graphic? Journalists also implement accuracy while collecting data for infographic. They determine who will be the sources and what the graphic will look like. The data will also be cross checked to the interview with sources to keep the accuracy. They will also attach the sources' names or initials if the data were from other people. Informant 11 said that "We check and recheck the data so the graphic content will be accurate and reliable." Meanwhile, Informant 12 said that: "I collect data for infographic from various accountable sources." Informant 9 emphasized the importance of mentioning data sources if the data were taken from other news sources. The journalists also emphasized the completeness in the news stories they wrote. They will use internet to search data year by year related to the news they wrote, for instance. They have had values to complete news stories and implement the values in journalism culture. In other words, the completeness value in journalism culture is now more visual. Although technology development allows journalists to get data via smartphone, they have to go to field directly because experiencing real condition is very important. If not so, they will find any difficulty to describe data needed for infographic. For instance, when they cover traffic accidents, they have to observe the location, road

direction, vehicles involved, color of vehicle, and other details. While in the past journalists would describe the details through text narration, nowadays journalists will add picture and infographics beside text narration.

McQuail's values of factualness, completeness, and accuracy are still implemented by journalists. However, perspective and practice of the values are shifting. Journalists do not only implement completeness on one event, but could also get complete data from internet. Completeness, factualness, and accuracy are not only shown in news text but also illustrated visually through infographics.

CONCLUSION

All sources agreed that infographic has important role nowadays. Infographic helps readers understand the news content and also could decorate page. Infographic shifts following technology development. When people want to read news story faster and more efficient, media should respond the shifting habit by developing news visualization through infographic. Journalism culture to produce news also changes. Media will add graphic data for visualization. The making of infographic needs cooperation between journalists, editors, and artistic designers to interpret and transform data into attractive infographic. The development of infographic in printed media is also influenced by technology used in the media. Infographic will also correspond the spirit of the media and the news type. The perspective of factualness, completeness, and accuracy also shifts. For example the journalists do not only count on one event but also try to compare it to other similar facts year by year. They have their own intuition to determine which news that needs infographic. News values are also emphasized in pictures, infographics, and other elements in printed media. News story and infographic are like ice cream and its cone. They are one and could be enjoyed in a whole. In the future, the function and role of infographic in media will be more important. The intensity and form will develop because technology helps making better infographic. Journalism culture will also shift a little bit by implementing visual communication in journalism practice.

BIODATA

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