From No Box to Drop Box: A Narrative Study of Communicating E-waste Recycling on Social Media

Siswanti1, Lila Nathania1, R. A. Aryanti W. Puspokusumo1, and Abdul Rauf Rizuan2

1Marketing Communication, Faculty of Digital Marketing and Hotel & Tourism, Bina Nusantara University, Jakarta, Indonesia
2Faculty of Communication and Media Studies, Universiti Teknologi MARA, Melaka, Malaysia

Abstract. This study explored the small stories as a narrative analysis of communication e-waste on social media Instagram. The data of this study is mined from the conversation and interaction between the ewasteRJ team with their follower. ewasteRJ is a Non-Governmental Organization focusing on campaigning, collecting, and recycling e-waste. Using a narrative study analyzing a small story created by E-wasteRJ, this study finds 42 posts campaigning e-waste collecting and recycling by introducing an e-waste drop box and drop zone. The result shows that small stories on ewasteRJ account can distinguish the narrative stance-taking and rescripting among ewasteRJ and followers participating in the conversation. The story of e-waste is represented by a content post by ewasteRJ as a narrative stance concerning e-waste handling. Dropbox as a central campaign and education in e-waste handling is present in every post. Finally, the story of e-waste in social media is not only the story of the communicator experience itself and all participants in online conversation, especially when the story circulates through related hashtags. It enables a new communicator.

1 Introduction

As the 4th highest populated nation in the world, Indonesia is a significant contributor to electronic waste (e-waste). In 2021, the Ministry of Environmental and Forestry predicted that Indonesia would generate around 2 million tons of e-waste. Although e-waste contains harmful materials, it is also very valuable. Therefore, it needs to be collected and recycled. Nevertheless, in Indonesia, not all e-waste is collected and recycled appropriately. A considerable portion of the e-waste ended up being dumped in landfills. The harmful substances of e-waste cause damage to the environment and human health, whereas valuable materials are wasted despite their high financial value. Santoso [1] predicted that in 2028, the amount of e-waste in Indonesia will be approximately 487,496 tons. Soon, we must find an appropriate system for handling e-waste with its negative impact and valuable material.

The harmful materials of e-waste categorized as hazardous waste include lead (Pb), nickel (Ni), cadmium (Cd), mercury (Hg), copper (Cu), and other heavy metals (Chan, 2013; Song et al., 2013 and Pinto, 2008) that need specific handling due to the toxic and hazardous content. Improper handling will risk the environment's health quality. For illustration, lead can cause damage to the central nervous system, kidneys, immune system, respiratory system, and reproductive health [2]. On the other hand, valuable materials in e-waste, including iron, steel, gold, palladium, and plastic, can be processed in a recycling center. Therefore, e-waste recycling should focus on two things; how to reduce the negative impact and generate benefits from the valuable materials.

Unfortunately, both develop and developing countries cannot recycles e-waste properly. This related to the huge costs required to process e-waste, such as recycling technology and labor costs, as well as strict environmental policies, so that development countries tend to dispose of e-waste in developing countries. Meanwhile, in developing countries, e-waste is collected by the informal sector and processed to extract valuable materials using rudimentary technology without sufficient occupational precaution [3]. Appropriate e-waste management could affect many stakeholders, including the household, which is important in generating and managing the waste stream [4]; [5]. A researcher mini-survey of 100 housewives in Indonesia showed that 81% of them know they must generate e-waste and hand it to a recycling center. However, they did not have information on where to send it out. On the other hand, 79% of the respondents utilize social media as a source of information on e-waste generation and other information regarding e-waste.

Recently, social media has been ubiquitous and become an integral part of everyday life with a large economic, political, and social impact [6], social media has become a medium for gathering information or news from family, friends, or conventional news media organization [7], [8], [9]. Social media users also could be exposed to information without actively seeking it out [10]. Social media is also contagious among members of social networks. Social media users can share a story of past,
ongoing, and future events. The story on social media is constructed as conversation and interaction among members or followers. Social media facilitate users to share visual content, including photos, videos, and text stories. In summary, social media allows individuals, groups, and organizations to collaborate, interact, and build community by creating, co-creating, modifying, sharing, and engaging with user-generated content that is easily accessible [6] including discussing environmental issues.

There are hundreds of social media platforms, such as Facebook, Instagram, Twitter, Pinterest, YouTube, and many more. Millions of users share many kinds of information and stories about environmental issues. Social media also facilitate users to find information about e-waste generation and recycling. For instance, Instagram and Twitter users can find e-waste information easily using a hashtag (#). By using #e-waste, #e-waste-recycling, #e-waste-management, and #e-waste-dropzone, Instagram users can find thousands of posts about the topic. This study aims to explore a story of e-waste generating and recycling shared by the followers of EwasteRJ Instagram account. EwasteRJ is the first NGO in Indonesia focusing on electronic waste, initiated by Rifa Jafar with campaigning and offering a drop-box for e-waste. Instagram is one of the social media that allows users to share their stories in visual and text forms. Small stories on social media help researchers understand the relations of self, society, and culture[11] and, specifically in this study, the environmental communication practice on social media.

1.1. E-waste recycling from the environmental communication perspective

Environmental communication could be seen as a powerful social process reflecting human and nature relations[11]. In other words, the relationship between humans and nature is expressed through symbols that describe the interrelated interaction between human attitudes and behavior and their physical environment. Environmental communication on e-waste handling could be used to improve awareness and change behavior on waste stream generation and recycling.

Under the government regulation 27/2020, E-waste in Indonesia is categorized as specific waste that contains hazardous and toxic waste. Therefore, it should be managed with certain processing. Implementing specific waste management is the same as waste management for household waste and similar household waste through efforts to reduce and handle the specific waste. Meanwhile, efforts to reduce specific waste are carried out by limiting the generation, recycling, and reuse of specific waste (article 4, paragraph 2). Meanwhile, specific waste management efforts are carried out by sorting, collecting, transporting, processing, and finally processing specific waste (article 4, paragraph 3). The source of e-waste comes from households, private and government institutions, and industries, and its flows to formal and informal collectors. A survey of 100 households in 4 districts/cities in West Java, Indonesia, shows that 46% send e-waste to the informal collector, 16% are mixed with other waste, and only 6% are sent to drop-box.

E-waste management an environmental perspective, essentially is the distribution of holistic information on e-waste from production and collection to recycling or reuse. National and local governments are responsible for increasing awareness, collection, and recycling of e-waste. However, most of the e-waste information is produced by individuals or NGOs concerned with the e-waste stream. Survey shows that the main source of e-waste information is from digital media, newspapers, posters, friends, and zero-waste stores. There are many types of digital media, including social media, websites, blogs, digital community groups, newspapers, television, etc. In recent years, social media becoming the most popular medium for producing and consuming information, and many competing theories support the idea of the powerful impact of social media in fostering community participation [10] through incidental news exposure [12], and other trusted social media users such as family and friends [13].

In Indonesia, one of the most preferred social media platforms is Instagram, which allows users to share images, videos, captions, comments, likes, geolocative tags, location tags, emojis, and more items over time [14] and allows users to apply different photo manipulations tools before share instantly to friends and their social networks [15]. Instagram instantly enabled users to create a community and became a valuable source to understand better existing or emerging practices and behaviors among specific communities [16]. EwasteRJ is one of the Instagram accounts that distributed information about e-waste, with 23.3K followers and 758 posts in 2022. They introduce e-waste drop-box, and drop-zone – a certain place of e-waste drop-box in targeted areas. The conversation between EwasteRJ and the followers creates a small story of e-waste management and turns interaction into self-presentation. Social media was chosen since this media can remain a public concern and attention on specific issues [17].

2 Research Methodology

The focus of this study is to examine the participation and interaction of social media Instagram followers of EwasteRJ in campaigning for e-waste generation and recycling. EwasteRJ also has other social media accounts, namely Twitter and Facebook. However, the Instagram account has more followers than the two others. The follower on Twitter is 683, and Facebook is 393. Until the end of May 2023, the Instagram follower has reached 25,500, or a rise of 1% in a year, or 23.3K at the end of 2021. The account has posted 771 feeds and 104 videos.

The data of this study is mined from the conversation participation among followers of EwasteRJ in the period of January – December 2021 as the most active period of the campaign. There are 758 feeds and 46 posts about events and campaigns. It is hard to find the number of participants who watched the campaign or event. Therefore this article focuses on sharing stories or conversations among participants or followers.
In line with [18] work, the data analysis focus on exploring three interrelated layers of story structures, including (1) ways of telling, (2) sites, and (3) tellers or communicator and finding the configuration of different stories and media environments. Data analysis will begin with the documented comments from followers, which are connected with the posts or previous comments, by exploring the time and organization of the Instagram environment. The analysis will figure out the unique interactional aspects of communication in social media as a contribution to the interactional communication model in convergence media.

The small stories research is employed as a narrative activity of telling the story of ongoing events, future, and hypothetical events [18]. There are three main reasons that small stories research can be conducted on social media: (a) the existence of small stories in media social in affordance for online analysis; (b) having tools for examining fragmented, transposable, and a-typical stories that can depart from other forms and practices of storytelling, and (c) engagement of social media which can help to answer the practice of meaning-making.

Following up on the work of [18], all data of EwasteRJ Instagram posts in the period of analysis will be categorized into two (1) narrative stance taking involves a post of the stories including the time of campaign; and (2) rescripting involves media-enable practices of visually and verbally manipulating previously circulated stories to create an alternative story.

3 Discussion

The stories of waste management in EwasteRJ are constructed through interaction among users in every post. There are 46 posts in the period of January – December 2021. The administrator’s theme posts include information on e-waste collection activities, campaign of e-waste generation and recycling, events/webinar, and general information on e-waste.

Model of post analysis to figure out the small stories as presented in Figure 1.

3.1. E-waste management communication on EwasteRJ Instagram

Regarding the rule of Indonesia government No. 27/2020, all single individuals must reduce, reuse and recycle electronic and electrical equipment, starting with the generation of e-waste, reuse it if possible, and send it to the recycling centers. Unfortunately, there is a limited number of e-waste recycling centers. A few local administrations provide drop-box for e-waste collection but do not support an e-waste recycling system.

E-wasteRJ uses Instagram to communicate e-waste management. The diverse content includes knowledge sharing, events on communicating, and the communicator. e wasteRJ is Non-Government Organization focused on e-waste management. The Instagram account was created in February 2015 and had 758 posts of e-waste information, an event of e-waste knowledge sharing, e-waste drop-box promotion, and an announcement of an e-waste collection zone.

Rafa Jafar, the founder of e wasteRJ, introduced the E-waste campaign and drop-box promotion. He got inspiration from his school project. The drop-box is a recycling box for electronic waste where people can dispose of unused electronics from phones, chargers, earphones, and large appliances (e wasteRJ Instagram account, June 30, 2022). During 2021, there are 42 posts contain of knowledge sharing of any kind of e-waste, promoting e-waste collection by providing drop-box in certain places, e-waste webinar information, campaigning of e-waste generating and recycling, and video sharing.

Generally, e wasteRJ develops two ways of communication with all followers. In every content they post, there is a chance for the follower to ask a question, share information, and repost the information at the follower circle. Communication about e-waste is presented through narration of the origin of one of the types of e-waste discussed, through videos presented in the form of stories by government figures and e-waste recycling enthusiasts, and by presenting infographics concerning the achievements of e-waste collection and around e-waste recycling.

The other important thing about the e-waste campaign is language usage. E-wasteRJ targets its campaign to Generation Z, especially high school students. This target can be seen from the target of their volunteer activities. They are recruiting high school students to be an agent of e-waste collection in certain places. However, an interview with one volunteer tells that 70% of followers are female. This data shows that women perhaps pay more intention to e-waste handling and recycling.

In summary, the communication ways that choose by e-wasteRJ in campaigning e-waste management are created through small stories on video and text. This communication led to interaction among followers and fostered the intention to participate in e-waste handling and recycling in their places. This communication style aligns with the research of [17] and [16] that interaction in social media, especially Instagram, creates an instant community with a similar interest. Stories of e-waste on e-wasteRJ visually or textually can categorize as the stance taking of e wasteRJ in introducing and promoting
e-waste collection and recycling. Considering the target audience is Generation Z, generating and collecting e-waste frames is a fun activity. Therefore they use fun words and visualization that relate to Generation Z.

Moreover, ewasteRJ always updates the story or information as a follower requests. For instance, when followers from Central and West Java ask for drop-box in their areas, the team responds by collaborating with various stakeholders, including the government, non-government organizations, community, and private sector, to provide drop-box. They also offer volunteerism as an agent of e-waste collection.

The E-waste management narrative in ewasteRJ’s Instagram is like a face-to-face conversation, with every individual involved in the online conversation. Followers are invited to participate in the conversation:

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Fig. 2. The turn-taking of conversation on e-wasteRJ account.
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Figure 2 shows the turn-taking conversation between ewasteRJ administrator and the follower

### 3.2. Events provided by E-waste RJ as a site of stories.

E-waste management promoted by ewasteRJ is stimulated by the experience of e-wasteRJ founder Rafa Jafar (RJ) and his curiosity about e-waste. His concern about the increasing amount of electronic waste from time to time and the unavailability of a place to accommodate this waste prompted RJ to offer the existence of a drop-box as a place to collect electronic waste. This story starts with his hobby of playing online games and collecting electrical kinds of stuff to complete his hobby until he comprehends that e-waste does not have the right place to collect and recycle properly.

Furthermore, from his small research to paper and following with a practical book on e-waste handling, he starts to promote a drop-box or a container for people who produce e-waste to drop in. Instagram become a site for speechmaking of e-waste collection carried out in all posts. Instagram allows users to create and re-construct stories on their accounts. The story from ewasteRJ will automatically be rescripted in followers' accounts and rolled out to other users using hashtags.

In 2021, in 42 posts found 31 hashtags such as #ewaste, #ewasterj, #ewasteRJdropbox, #pedulilingkungan #sampahlelektornik, #khk, #relawanlingkungan, #totebaglucu, etc., relate to the event or information being share. On Wednesday, they use a #rabutambahilmu as a symbol of time to post a new understanding of specific material on e-waste. The hashtags lead readers to other sites where the story is manipulated or re-created as an alternative story. The circulation represents a new site of the story. Moreover, the other user or follower of the new account may turn-taking into a storyteller in a different story form.

Following the work of [18], sites of the small stories could be a place where the other speakers or Instagram users create an alternative story that involves changing the place or plot of the stories, for instance, a search using the hashtag #sampahelektornik found 1000 posts following with different captions as a new story of e-waste or e-waste drop-box. The other post of @sarugafindonesia as one of ewasteRJ followers posts a different drop-box photo and inserts a more interesting caption. Hashtags usage also helps the reader find other stories about e-waste management.

### 3.3. EwasteRJ as Communicator

Social media include Instagram enabling users to be a communicator and communicators simultaneously. However, the owner account usually has a role as the initiator in posting text or video messages. The teller dictates a theme to be posts, and various types of engagement [18], such as using a video in e-waste sorting campaigning.

Three videos posted by ewasteRJ in 2021 attract more followers to views than texts or photos. Generally, posts of text or photos only attract 52 – 700 views or likes, but using a video as a communicator, viewers range from 1,700 to 2,700. Video usage shows the multilayers communicator on Instagram as a follower who communicates an alternative story in their own account and then circulates it to their circle.

Additionally, the story of e-waste presented by ewasteRJ as a communicator is not only the story of RJ as a founder or his team. Likewise, it’s become a story of a person who understands e-waste management and the negative impact of materials contained in e-waste. Conversely, a new story is inserted with the teller's experience when the story circulates.

The three elements represented the interaction between participants and ewasteRJ, which created a story that participants could rescript by using hashtags (#) or repost in their account, so their followers or viewers could see them. Consequently, the stories can be spread to another account or social media of the follower and reach out to more people to watch, like, and comment.

### 4 Conclusion

Small stories of e-waste developed by ewasteRJ figure out the appropriate way to communicate e-waste management to a specific community. The stories of e-waste are represented by a content post by ewasteRJ as a narrative stance concerning e-waste handling. Dropbox as a central campaign and education in e-waste handling is present in every post.

Finally, the story of e-waste in social media is not only the story of the communicator experience itself but also the
story of all participants in online conversation, especially when the story circulated through related hashtags, enabling a new communicator. In short, a small story analysis promises a new tool for analyzing conversations on social media since it points out the specific audience of the story.

References