Industry, Brand, and the Role of Digital Medium

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***Abstract*—Rapid growth in information technology forces various industries and business owners to think strategically to reach public attention. This condition also brings the logical consequence of using online medium as their primary marketing tools. Various online medium or usually called as social media such as Twitter, Path, and Facebook have been used by numerous industries as tools to communicate their ideas, brands, and promotion to the public. Along with this condition, industries need to think strategically to develop contemporary marketing communication strategy. This research is a case analysis focusing on examining marketing communication strategy of a brand. One brand identified is Pocari Sweat, Japanese isotonic drink brand. This brand is selected due to the availability of our computer devices to track the tweets. From this study, we have concluded that in this disruption era, marketing communication strategy can be known and identified by others only by tracking their digital footprint.**

***Index Terms*—Industry, Twitter, Marketing, Valence, Arousal, Algoritma Kata**

I. Introduction

THE issue of massive technology development in human communication has brought many consequences to various industries in Indonesia. This development produces various online media and social media such as Twitter, Path, Facebook, and Instagram. Those are applicable for various purposes including marketing communication. In the past, consumers came to the market to search products. Nowadays, online medium acts as the seller who always opens for 24 hours. In addition, the existence of online medium also facilitates new employment for many Indonesians from an online shop to digital advertising. The existence of digital era is not just short-term momentum. It also changes Indonesia market paradigm. Due to this condition, industries need to respond swiftly to this shifting paradigm. Industries cannot swerve from this changing condition, and they need to start thinking about current market intervention by using online medium as their primary tool. Therefore, contemporary method and baseline research to explore and understand online market are crucial.

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Currently, the industries in Indonesia already respond to this condition. Various market penetrations have been published such as a corporate online shop to communicate with consumers through related social media. All of these activities are conducted to reach the market by online trading. In generic term, all activities related to trading or facilitation of trading in products by using computer networks is known as electronic commerce or e-commerce [1]. In Indonesia, the growth of e-commerce industry significantly increases each year. According to statistical data from Ministry of Information and Communication 'Kementerian Komunikasi dan Informatika' (Kemkominfo) [2], there were three significant players for e-commerce. The first rank was OLX. The second one was Tokopedia, and the third was Lazada.

OLX is Internet industry which facilitates users to sell their products especially second-hand products. In short, OLX focuses on second-hand products. Meanwhile, Tokopedia and Lazada focus on facilitating various sellers to open their stores virtually. The significant increase of e-commerce in Indonesia is also addressed by Indonesian government under Kemkominfo by developing National E-commerce Roadmap [2]. The roadmap handles various issues related to e-commerce such as fund, tax, consumer protection, infrastructure, logistic, education, and human resources. The roadmap is expected to be a strategic solution for many e-commerce doers in Indonesia. Finally, e-commerce industries can contribute significantly to the Indonesian economy.

It is a fact that the existence of e-commerce is not only affecting marketing paradigm, but also the consumer behavior. It cannot be denied that market

is related to human behavior. Every marketing communication strategy is constructed to influence human perception. Some industries have already captured this phenomenon such as Gatorade and Coca-Cola by developing special division to monitor dynamic market in Twitter [3]. This research tries to explore the behavioral issue in the online market, specifically how industries use Twitter to develop a brand and construct emotional influence towards users. Twitter has been used by various industries as an online medium to communicate with consumers. An empirical study conducted by Ref. [4] described that numerous industries in USA and Australia developed marketing communication through Twitter such as Microsoft, Cosmopolitan, Billabong, and Virgin Mobile. The research explored that various industries used different marketing strategy to communicate with users on Twitter. For example, there were the hashtag (#) and hyperlinks. The hashtag refers to digital symbol (#) used to mark specific topic, whereas hyperlink is an online (web) link posted in a tweet. It is used to direct the user to go to another web page. The result showed there was no significant correlation between frequency of tweets published and interactive discussion that happened between user and industry. It showed that influencing users in Twitter was not depending on the frequency of tweets.

Then, the question of how industries create specific or effective marketing communication by using Twitter becomes important. The research to examine the interaction between industry and user in Twitter is needed. By examining the interaction, the researchers can generate some insight that may be relevant for developing cost-effective marketing communication strategy with Twitter. The researchers propose the theory of emotion as the framework to explore the interaction. Emotion is the significant variable in human interaction due to its function as the behavioral marker [5, 6]. Behaviorl refers to the antecedent variable that emerges before the behavior. In consumer behavior, emotion plays a role in brand interest and purchase intention [7]. Moreover, the researchers follow Russell's framework [8, 9], which declared emotion as a psychological state due to the combination of valence as psychological condition and arousal as the biological condition. The interaction between valence and arousal are named as Circumplex Model of Affect (CA) [8, 9]. CA is the well-established theoretical model used in various psychological measurements, such as four dimensions mood scale [10], positive and negative affect scale [11], affect grid [12], and affective norms of English words [13]. CA has two primary components: valence and arousal. It explains human emotion as a marker of specific behavior towards the object. Valence refers to the human psychological condition which is pleasant and unpleasant. Meanwhile, arousal focuses on physical condition categorized as calm and excited.

II. Research Method

This research is conducted in three primary steps. First, the researchers decide the analysis unit based on one brand in Indonesia, namely Pocari Sweat (PS). PS is chosen due to the availability of the data from the researchers' computer engine (Tracker). In this research, PS is only applied for case analysis to understand how the brand communicates with the consumers (users) on Twitter. In specific, PS is owned by the Japanese company in Indonesia, namely Amerta Indah Otsuka in South Jakarta. All the information regarding the company can be seen on the official website, https://www.aio.co.id/id/contact-us. This company has two legal factories in Indonesia located in Sukabumi, Jawa Barat, and Malang, Jawa Timur. Second, the researchers collect tweets of this brand for over one month from 1st August 2016 until 31st August 2016. The researchers use specialized computer software, Tracker, to collect all the tweets with Pocari and Sweat as the primary keywords. Last, the researchers examine valence and arousal by collecting words from numerous tweets. The researchers use Algoritma Kata or AK [14, 15] as the primary tool. It contains Indonesian words collection with valence and arousal score in each unit. Then, the researchers combine digital tracking with word count principle or WCP [16] as the analysis framework. WCP focuses on finding and analyzing unique words and words in Twitter that matches with the words bank.

A. Tracker to Examine Tweets and Users

As an attempt to collect all the information needed for this research in cloud, the researchers use specialized computer engine developed by Provetic Lab, namely Tracker. The researchers use this tool to search, find, and identify all the accounts who are discussing PS. By using Tracker, the researchers can make grouping analysis based on collected accounts interacted with PS by sharing tweet, regarding this brand. In grouping analysis, the researchers analyze the brand based on top topics related to brand and dominant users who like to mention the brand and also mentioned users. All of those processes are conducted with the support from Tracker.

B. Algoritma Kata to Explore Emotion in Tweet

Algoritma Kata (AK) is Indonesian word bank with more than 3 000 words and emoticons collection. It

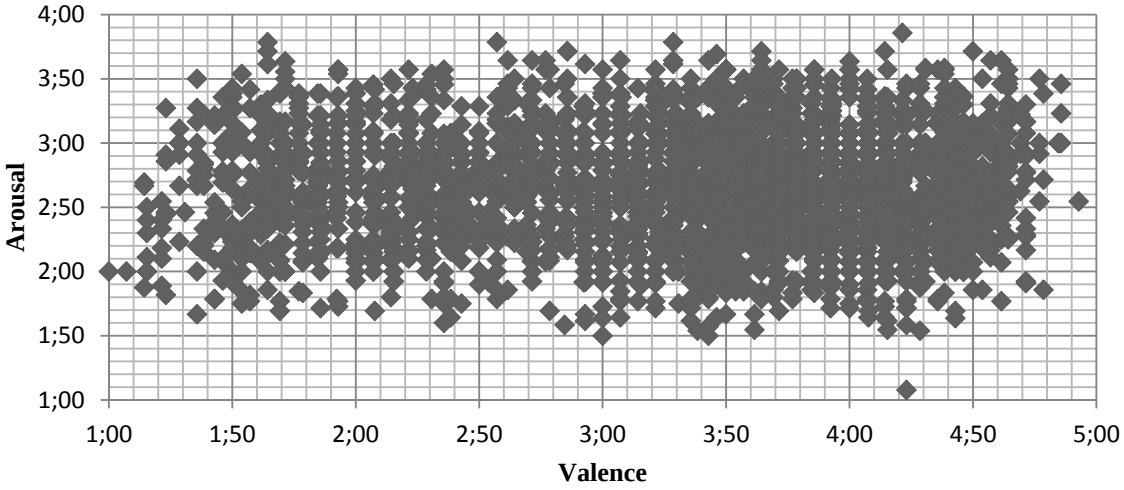

Fig. 1. The distribution of words in AK based on valence and arousal scores.

has valence and arousal score in each unit [15]. AK is constructed using ANEW's framework which refers to English word bank that is also with valence and arousal score in each word [13]. In its development process, around 3 000 words and emoticons in AK are gathered from the Twitter conversation in 2010 until 2012. Each of word unit has valence and arousal score. These scores are derived from 14 independent raters who have rated each unit. Figure 1 shows the distribution of 3 000 words and emoticons in valence and arousal poles. The horizontal line represents valence, and vertical line represents arousal. Equation (1) shows numerous words that describe the different level of valence and arousal. Word with the highest arousal is "*spektakuler*" (spectacular), and the lowest arousal is "*sunyi*" (silence). In valence aspect, the word that has highest positive valence is "*optimis*" (optimist), and word with the highest negative valence is "*membunuh*" (murder).

To calculate valence and arousal in each tweet, the researchers use calculation formula constructed by Ref. [17]. Equations (1) and (2) describe the formula to calculate valence and arousal in each analyzed tweet. The symbol of a_{text} represents arousal score, and v_{text} represents valence score. Technically, the formulas are using the sum of valence and arousal scores from unique words, and it is divided by total unique words counted in each tweet.

$$a_{\text{text}} = \frac{\sum_{i=1}^{n} a_i f_i}{\sum_{i=1}^{n} f_i}. \tag{1}$$

$$v_{\text{text}} = \frac{\sum_{i=1}^{n} v_i f_i}{\sum_{i=1}^{n} f_i}. \tag{2}$$

III. Results and Discussion

For the calculation illustration, the researchers have picked a tweet related to PS. Those are @PocariID: *Selamat Hari Raya Idul Adha bagi yang merayakannya! Lengkapi momen kumpul keluarga bersama POCARI SWEAT!* From this tweet, the researchers capture six unique words (underlined) that are matched to AK word bank. There are *selamat* (congratulation); *hari* (day); *raya* (great); *kumpul* (gather); *keluarga* (family); and *bersama* (together). Valence and arousal score for these six words are *selamat* (4.46/3.14); *hari* (3.64/2.21); *raya* (4.28/3); *kumpul* (4.30/3.07); *keluarga* (4.85/2.15), and *bersama* (4.30/3.14). By using formula by Ref. [17], the researchers calculate the overall valence and arousal score. The results are as follows.

$$a_{\text{text}} = \frac{1}{6}(1 \times 3.14 + 1 \times 2.21 + 1 \times 3 + 1 \times 3.07 + 1 \times 2.15 + 1 \times 3.14) \approx 2.78. \tag{3}$$

$$v_{\text{text}} = \frac{1}{6}(1 \times 4.46 + 1 \times 3.64 + 1 \times 4.28 + 1 \times 4.30 + 1 \times 4.85 + 1 \times 4.30) \approx 4.30. \tag{4}$$

From numerical calculation results, the researchers can conclude tweet from @pocariID contains valence score of 4.30 and arousal score of 2.78. If the researchers place this score using valence and arousal framework as described in Fig. 1, this tweet from @pocariID has the positive valence (>3) and the high degree of arousal (>2.5). The decision is derived from median that is used as a marker to differentiate valence and arousal score contained in each tweet. The researchers decide 3 as the median for valence and 2.5 for arousal.

TABLE I
DESCRIPTIVE RESULT RELATED TO USERS, MENTION, AND TWITTER CLIENT.

Brands	Top Five Active Users	Top Five Mentioned Users	Top Five Twitter Clients
PS	@hiroktk (10) @pocari_8 (7) @ryannuradli (5) @pocariid (5) @binyosaurus (5)	@itscharosoriano (106) @s_nadsejkt48 (89) @btslokal (32) @pocariid (32) @pocarifutsalid (23)	Twitter for Android (476) Twitter for iPhone (116) Twitter web client (75) Path (50) Mobile web-M2 (40)

A. Accounts Involved in PS

For the first analysis, the researchers have examined various accounts (users) involving in the conversation regarding the brand. The researchers use two categories related to the characteristic of the user, top active user, and top mentioned user. The top active user refers to an account which frequently discusses the brand by posting tweets or mentioning others. Meanwhile, the top mentioned user is most frequently mentioned account by others. These two characteristics are examined to identify the degree of attachment of users toward PS. In addition, the types of Twitter client used by users to access Twitter are examined. The Twitter client is a digital platform which provides Twitter as a digital application in digital devices such as Twitter for Android, Twitter for iPhone, Tweetdeck, and others.

Table I shows the information related to these three aspects. Those are active users, mentioned users, and Twitter clients. The number in parenthesis reflects the frequency of tweet shared by users in each category. The result shows that active users or mentioned users are having a connection with PS brands related to various things. It is from advertising, actress to corporate programs. For example, @hiroktk and @itscharosoriano are two young Japanese online celebrities who are officially appointed by the company to endorse PS through television and online social networking.

B. Top Topics in PS

In this result, the researchers also analyze what kind of top topics emerging while discussing the brand. To analyze this issue, the researchers apply Tracker to search top topics from the data. The top topic is the combination of two most frequent words in Twitter conversation. The top topic is a cue to understand more the impact of marketing communication strategy developed by the company. This type of analysis has also been conducted by Ref. [18] for numerous tweets in understanding political situation in Indonesia after Joko Widodo has won the presidential election. Based on this analysis, they could find empirical pattern regarding the period of risen and lost political opinion in public. The researchers replicate those methods to understand consumers' responses toward the brand.

TABLE II
TOP FIVE TOPICS INSIDE THE BRANDS.

Top Topics	Freq.	Underlying Events
Iklan Pocari	120	Comment towards new PS advertising.
Bali pure Pocari	108	Re-tweet from Philippines tennis player.
Ice cream	93	Re-tweet from one of the JKT48 member.
Pocari Swag	34	Another brand name given in twitter for PS.
PT Amerta	27	"*Check in*" status in Path from the industry.

This analysis may be powerful to plan and execute counter communication strategy for another related brand by understanding the detail of communicator and the participants. Table II provides further information on the topics and short description concerning each topic (underlying events).

From the result in Table II, the researchers can understand that the marketing communication constructed by the company to endorse the brand. As a brand that focuses on isotonic drink, PS focuses on the emotion after users consume PS. PS is trying to construct several positive emotions through several slogans in Twitter. In general, this brand is also involving users from diverse background together to endorse the brandfrom actress, girlband to athletes (JKT48 and tennis player from Philippine). For example, topic concerning "ice cream" is a topic posted by JKT48, Indonesian girlband who endorses the brand through television advertisement. In addition, this result gives an insight that disruption era needs to be considered by many industries. This result has shown that strategy developed by one corporate can be easily known by others if they have the capacity to track, identify, and examine it. It means corporate needs to make quick and diverse innovation to prevent losses in this digital era.

C. Interactivity Level of PS

As an attempt to understand the interaction between the brand and consumers, the researchers examine types of tweet by users in discussing the brand. The degree of interaction or empirically named as

TABLE III
INTERACTIVITY OF TWEETS FOR PS (N=1 000).

Interactivity Level	Frequency (%)
High interactive Hashtag (#)	18 (82)
Medium interactive Retweet	38 (62)
Low interactive Replies	20 (80)

interactivity level is useful to understand and explore the effectiveness of marketing communication of the brand [4]. Reference [4] mentioned three level of interactivity in Twitter. Those were high (hashtag/#), medium (retweet), and low (reply). These three levels empirically are shown as an effective mapping to examine the effectiveness of communication through Twitter. Reply tweet refers to response tweet towards tweet from one account, whereas retweet refers to tweet that is facilitated by one account to show in his or her timeline. If reply and retweet are related to user's response to the tweet, it is different with hashtag. In general definition, hashtag refers to digital symbol (#). It is used to mark one or several unique tweets and has a theme [19]. Users will use this symbol to mark a topic that can be generated from one issue. Hashtag can be popular if other users also use the same hashtag in their tweets. The interactivity level is useful for marketer because it reflects the need of consumers. In addition, this information can function as early warning system for a company to monitor the brand.

Table III describes the interactivity level of PS where it is categorized in three levels. To produce statistical robust in descriptive data, the researchers conduct random sampling [20] to select 1 000 tweets from the database. From Table III, it can be seen that PS focuses its attention on topics that can be shared through hashtag (82%). Based on this result, it can be known that various topics constructed by the brand are digestible. In this situation, hashtag will also be the magnet for other users to also share their opinion, idea, and insight regarding the topic. Then, if this situation is getting bigger, consumer will be aware of this brand and remember it.

D. Valence and Arousal of PS

To build comprehensive analysis regarding the content of the tweets, text analysis by applying valence and arousal framework is conducted. Content is crucial in marketing communication due to its impact to attract audience or consumers [3, 13]. Text analysis combined with emotion framework [8, 9] is applied to examine emotional response from users towards the brand. The researchers analyze the tweet by applying word count principle [16]. It focuses on unique words that are counted by the machine. Unique words in twitter are related to the brand and matched with AK word bank. There are 457 tweets with 1963 unique words captured in discussing the brand. By clustering unique words, the researchers can examine the degree of valence and arousal representing the brand. Moreover, the researchers apply formula by Ref. [17] to calculate mean score for each aspect. Table IV shows top five unique words and mean score for valence and arousal. It represents emotion level in the brand. Meanwhile, for the nature of the brand as isotonic drink, four unique words also represent joy (*haha* and *bagus*) and product (*minum*).

TABLE IV
DESCRIPTIVE RESULT RELATED TO USERS, MENTION, AND TWITTER CLIENT.

Brands	Top Five Unique Words	Valence	Arousal
PS	*Iklan* (Advertising; 148) *Minum* (Drink; 131) *Haha* (Haha; 105) *Hm* (Hm; 93) *Bagus* (Good; 50)	3.53	2.67

In analysis process, the valence and arousal difference are shown in mean score. There is no significant difference between the two ($p > 0.05$). In addition, as an attempt to explore more the result, The researchers also capture the result with Russell's emotion model [9] based on the interaction between valence and arousal. This model allows the researchers to map unique words on four different quadrants. It is shown in Fig. 2 (Q1–Q4). First quadrant (Q1) represents positive valence and high arousal level, second quadrant (Q2) for negative valence and high arousal level, third quadrant (Q3) for negative valence and low arousal level, and fourth quadrant (Q4) for positive valence and low arousal level. The researchers apply median as cut-off score for valence (3) and arousal (2.5). Cut-off score is used to categorize statistical position in each aspect, valence, and arousal [17]. Most of the unique words representing the brand are categorized in Q1 and Q4. From this result, the researchers can easily know that PS uses positive words (positive emotional labels) to in Twitter to raise the attention.

IV. CONCLUSION

There are two significant conclusions. First, it relates to the consequences of digital disruption in marketing communication strategy. Second, it is the method applied. The case of PS can be a valuable insight for everyone who handles marketing communication. In this disruption era, Twitter and another online social network can easily inform the types of communication that one or several brands use to reach public attention

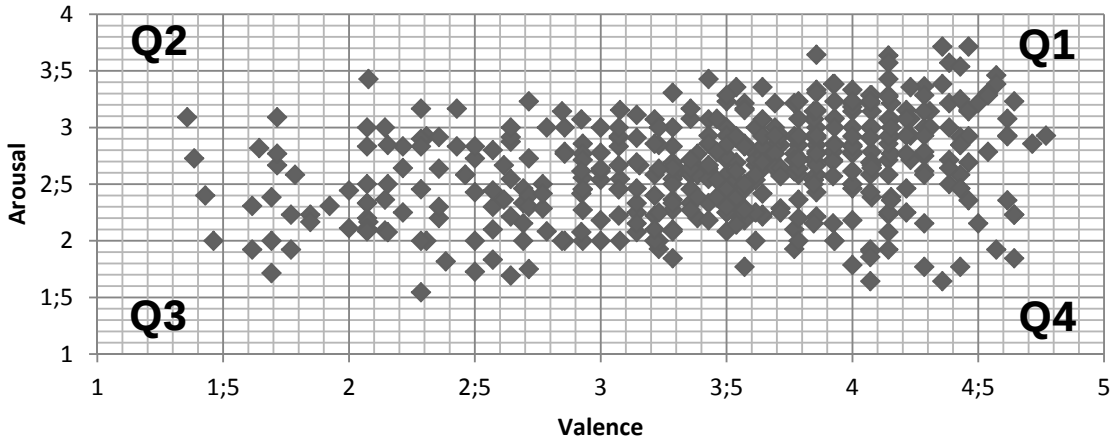

Fig. 2. The distribution of unique words in PS based on Russells framework.

and awareness. This case study also shows that other marketer or competitor can easily examine the communication pattern in social media. In business, marketing communication through online social networking encourages industries to think fast and responsive towards rapid competition. In consequence, industries need to plan and execute more flexible innovation strategy to raise attention and awareness in public.

In empirical context, combining psychological and big data analytics from Twitter is a new alternative to understand consumers and find current trend. Knowing and implementing appropriate tool and big and complex online database can be valuable for industries to understand various aspects of consumers. Moreover, combining emotion theory to big data is a solution in this disruptive era to understand consumers due to its capabilities as a marker of consumer behavior. Then, knowing consumers response (emotion), the industries can effectively plan and execute best strategy in communicating with the consumers.

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