

CONTENT ANALYSIS OF INDONESIA'S E-COMMERCE ON FACEBOOK PAGE USING SOCIAL NETWORK ANALYSIS FOR SOCIAL CUSTOMER RELATIONSHIP MANAGEMENT EFFORT

(Case Studies: Shopee, Tokopedia, and Bukalapak)

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Abstract

Digital economy's era has been stimulating the high competition of e-commerce companies and the rapid growth among them. The prosperousness of open-source data can be an opportunity to provide strategies for a business to find new ways to understand market behavior. Most companies use social media to support Social Relationship Management (SCRM) activity. E-commerce is included in the sector which also utilized social media to interact with their customers. Therefore, it is necessary to understand how the characteristics and activities of SCRM networks. Measurements are made by calculating SCRM network property values and descriptive statistical analysis. This research measured and compared the SCRM network properties and the descriptive statistics analysis among the three e-commerce: Shopee, Tokopedia, and Bukalapak on Facebook pages. The result will give us insight on what is important to understand the market. The research founded the type of content characteristics among e-commerce in social media marketing campaign and level of activity to engage their customer by comparing their productivity to post their content on Facebook Page. The market size represented by the community conversation of each SCRM network in e-commerce.

Keywords: E-commerce, Social Network Analysis, Content Analysis, Social Customer Relationship Management, Facebook Page

1. Introduction

Currently, countries in Asia have experienced to face high growth of Internet users. In 2017 recorded as much as 46.7% of internet users in the world come from countries in Asia. While the remaining 57.8% comes from countries around the world. Indonesia ranked in top three as the country with the most active internet users in Asia. Indonesia nominated Asia's Top Internet Countries as of June 30, 2017, with China and India still at the top [26]. The increasing use of internet also has an impact on the increasing number of online transactions in Indonesia. As reported by Idea (Indonesia E-commerce Association), The number of online transactions in Indonesia in 2016 reached 5.6 Billion dollars from 9% of the total population of Indonesia.

Shopee, Tokopedia, and Bukalapak are among the popular e-commerce visited site. Their business model is Customer to Customer, as known as C2C The point of interest is Shopee as the youngest e-commerce platform rather than Tokopedia and Bukalapak. Shopee has already gained five times more search interest in 2017 to 2016 [28]. Shopee has the stimulant programs, campaigns and promotions. Shopee became the top 5 e-commerce list with the most number of visitors and the highest number of fans on Facebook Page. Shopee has consistent growth [13].

The effort to stay competitive among similar e-commerce sites is measured by their content characteristics strategy to engage their customer on Facebook page. The research use Facebook page as primary social media. According to Jakpat [9] In Indonesia, Facebook Remains the Most Popular Social Site. Among Social Media platforms, Facebook is the most widely used [3] and it is considered the most popular social networking website [17]. It has incorporated this tool in their marketing strategies. Facebook has engagement value in its dataset. There are three kinds of interactions between users and post in Facebook; they are comments, shares, and reactions which is including likes. Based on how Facebook works, the more users make comment, sharing, and reactions a post will increase the probability that the post will disseminate across a Facebook user's timeline, thus it generates more conversations.

Social media engagement and awareness have enhanced the marketing efforts. The engagement of customers or the audience on online social media has opened a point of interest and concern for e-commerce. Not only as the platform to receive the content but also participate actively in content creation, development, and dissemination in Social Media [30].

The existence of social media, companies can use it as technical support to enhance interaction and virtual relationships with customers [8]. Ernest & Young (2012) also, suggested that companies should expand their activity online especially in social media interactions not only to promote their products but also to enhance interaction with their customers.[10] The huge growth of customer base enables marketers to explore social

media networking sites as a new medium to promote their products and services, therefore can reduce in clutter of traditional medium advertising of reaching the mass customers as part of their online content marketing campaign in social customer relationship management effort.

Several studies use social network analysis models to analyze the user-generated content from social media for social customer relationship management efforts. [1] [2] proved there is a relationship between SNA models to measure user-generated reviews social media for the SCRM network efforts. Using social network analysis to make recommendations since social network analysis can be used to investigate the relationships of customers. It can extract the valuable information for the decision maker to improve the better strategy. Jiang et al. (2011) [14] prompted that managers can use discussion content contained in firm-specific social media to understand the concerns of stakeholders to make informed decisions. Their results demonstrate the manner in which social media can be used to better understand stakeholder reactions to the major events in a firm.

The data analyzed using Social Network Analysis method. To analysis SCRM network properties using NetworkX and Gephi to visualize pattern of the customer behavior. The content of Indonesia's e-commerce in social media will influence the SCRM networks. The active SCRM network will have a positive impact on the company. Therefore, it is necessary to know how the characteristics and activities of SCRM networks are formed by measuring using Social Network Analysis (SNA) method. Measurements are made by calculating SCRM network property values and the summary of descriptive statistical analysis. The network property is selected because it suitable to process the raw data from social media. In addition, a descriptive statistics analysis will use to show the level of intensity of e-commerce to produce their content. The objective of the research are; first to identify the five highest engagement value of content characteristics based on the ecommerce Facebook page. Second to identify which e-commerce Facebook page has the highest level of activity to engage their customer by comparing their productivity to post their content. Third to identify which e-commerce Facebook page has the most robust by comparing their respective social network properties.

2. Theoretical Overview

a. E-commerce

E-commerce defined as the use of internet and web for business transactions. Formally, it enables digital commercial transactions between organizations and individuals[16]. Laudon & Traver (2012:58) argued that there are five types of ecommerce. Based on the basis of market relations, e-commerce is divided into Business-to-Consumer (B2C), an online business that sells to individual consumers or individuals. Business-to-Business (B2B), is an online business that sells to other businesses Consumer-to-Consumer (C2C), providing a way for consumers to trade with other consumers. In this research focus on Customer to Customer. Comparing among three popular e-commerce in Indonesia which are Shopee, Tokopedia, and Bukalapak. Most e-commerce businesses have actualized the opportunities in utilizing analytics and data to improve productivity, acquire a competitive edge and improving the decision-making process [12].

b. Social Networks and Social Customer Relationship Management

Social networking at a high level is described as the convergence of technologies that make it possible for individuals to easily communicate, share information, and form new communities online. Social networks began as the province of individuals; businesses are now trying to capitalize on this trend as they search for specific strategies and tactics to derive value from it. In fact, Gartner Research shows a large increase in investment in social networking by businesses. Its defined Social CRM is a philosophy & a business strategy, supported by a system and a technology, designed to engage the customer in a collaborative interaction that provides mutually beneficial value in a trusted & transparent business environment. Business focus on environments & experiences that engage customer [19].

c. Customer Engagement

Customer engagement is a way to gain customer loyalty and satisfaction with brands and communities, empowerment, trust and commitment to other members of the community. Interactivity between customers and a business is at the essential of the engagement construct [22]. Behavioral customer engagement refers to actions toward a firm that are not restricted to only purchasing [5], but also include participation, fervor and interaction with the focal e-commerce [15].

d. Social Media Engagement

The concept of customer engagement in market research is comparatively new and it has been dealt with widely diverging, therefore an understanding of the nature of engagement is both current and notable [11]. In addition, social media engagement related to counting the public shares, likes, and comments for an online business' social media efforts. Engagement has historically been a common metric for evaluating the performance of social media.

e. Social Media Marketing

Social media marketing has been defined as "a social and managerial process by which individuals and groups obtain what they need and want through a set of Internet-based. Social media enable customers to connect and

interact with other customers and non-customers in their social networks and influence them [24].

f. Facebook and Engagement Value Analysis

The popularity of social media has led to many brands using platforms such as Facebook for marketing communications, typically whereby brands post content (text, images, and/or videos) on their social media pages for their consumer “fans”. Despite the widespread use of social media marketing, relatively little is known about how various characteristics of branded social media content affect different types of consumer engagement (e.g., liking, commenting, sharing) with brands on social media [27]. According to Jakpat [9] In Indonesia, Facebook Remains the Most Popular Social Site. Among Social Media platforms, Facebook is the most widely used [3] [17]. It has incorporated tool in their marketing strategies. Based on how Facebook works, the more users make comment, sharing, and reactions a post will increase the probability that the post will disseminate across a Facebook user’s timeline, thus it generates more conversations. It defines post engagement value based on total number of comments, shares, and reactions that a post has.

g. Big Data

Chen et al. (2014) [7] said that big data is used to describe the unprecedented quantity of data and it includes masses of unstructured data and semi-structured data that involve spending more real-time to conduct the analysis. Based on the definitions, characteristics of big data can be summarized as three Vs, namely Volume, Variety, and Velocity [21]. Volume means the data keeps growing rapidly and the size of data is so large that could reach exabytes, zettabytes, and even more. Variety means the data obtained from different sources and presented in different formats. The formats of big data not only include traditional structural data but also semi-structural data and unstructured data, such as video, audio, image, and webpage. Velocity means data generates very prompt and the data collection, data mining and data analysis should be conducted as soon as possible in a tolerable time so as to exploit the potential value of these data [7].

h. Social Computing

Social Computing is the computational version of the process of extracting ideas from human society to develop computational systems. The mechanism of a person building their social network as a set of relationships with other individuals, each built as a result of experience in interaction with this individual, can be mimicked in e-commerce applications and used to establish the trust relationship of cooperation [30].

i. Data Mining

Data mining is also called knowledge discovery in databases (KDD). It is commonly defined as the process of discovering useful patterns or knowledge from data sources, e.g., databases, texts, images, the Web, etc. The patterns must be valid, potentially useful, and understandable. Its defined in several steps: pre-processing, data mining, and post-processing [18].

j. Social Network Analysis

The study of social networks is formally defined as a set of nodes, which consist of network members [31]. Those nodes are connected by different types of relations, which are formally defined as links. A social network is basically comprised of a set of nodes connected by one or more links, which represent distinct types of relationships. Social network analysis (SNA) has attracted a lot of attention in recent years [1] [2] [6]. Different from variable analysis and topological analysis, which focus on the concepts and attributes of objects, SNA addresses the structure and relationships of objects.

k. Descriptive Statistics Analysis

In general statistics is concerned with the scientific method by which information is collected, organised, analysed and interpreted for the purpose of description and decision making. Descriptive statistics are summary statistics that quantitatively describe or summarize features of a collection of information, while descriptive statistics in the mass noun sense is the process of using and analyzing those statistics. The aims to summarize a sample, rather than use the data to learn about the population that the sample of data is thought to represent [32].

3. Research Methodology

The research method used is quantitative data, since the data required to analyze the content characteristics of three e-commerce is taken from Facebook pages of Shopee, Tokopedia, and Bukalapak. Based on the purpose of the study, the purpose of this study is exploratory. The research explores the role of content in driving consumer engagement in social media in a large-scale field setting. The research measured and compared the SCRM network property and the characteristics strategy will be examined in accordance with the time of the data gathered within one year from September 1st, 2016 to September 30th, 2016. Therefore, the method used in this study is social network analysis (SNA) and descriptive statistical analysis. Tsvetovat (2011) [29] mentions that simply SNA can be called a study of the relationships between humans described in graph form. SNA describes social relationships in network theory consisting of nodes and ties (or also called edges, links or connections) where nodes are actors/individuals in a network and ties are relations between actors [20] and descriptive statistical analysis to measure the engagement value.

The SCRM Networks have several attributes that can be calculated and analyzed called property networks. This network property can be used to define a network model by using the SNA method. The network properties to be used are as follows:

Table 3.1 Indicator of SCRM Network Properties

Network Property	Function
Size	Shows the number of nodes present in the network. If there are many nodes in the network, the network can be said to be quite active. It means many actors are interacting.
Density	Shows how closely the relationships between nodes in a network. Increasingly high density value, then the network has a strong relationship. the e-commerce can embrace its customers well through social media
Modularity	The higher the modularity value the network contains the groups in it. These values can be used to detect communities.
Diameter	The maximum distance in a network. when the third of e-commerce is compared, the better is the network that has a smaller diameter value.
Average Degree	The average degree of the number of links that connect one node to another node. The more links that connect a node to another node, then information dissemination is getting faster and easier
Average Path Length	Average distance between nodes with other nodes in a network. In social media, average path length is used as the average number of accounts or particular nodes
Connected Component	The smaller the Connected Component value the better because the network is not split.

The population in this research uses Facebook Page among three popular e-commerce in Indonesia which are Shopee, Tokopedia, and Bukalapak. The research crawled data in accordance with the time of the data gathered within one year from September 1st, 2016 to September 30th, 2017 using Gephi, NetworkX, and SPSS.

a. Data Collection

Data collection is done by crawling using Netvizz applications connected to the Facebook API. The data is a collection of the post, type of content, engagement value, in three different Facebook pages which are Shopee, Tokopedia, and Bukalapak.

b. Preprocessing Data

The dataset and unnecessary attribute that has been collected. Then, done by preprocessing to remove irrelevant attribute to make it easier to do the analysis process.

c. Network Model Creation

The data that has been through preprocessing and then will be processed using Gephi application to create a visualization of its network model. The type of graph used is undirected graph, a graph that does not consider the direction of the relationship on the node. In the type of graph there is no in-degree (intended node) and out-degree (node origin). Based on the result will produce a network model for each e-commerce.

d. Network Property and Descriptive Statistical Analysis Calculation

The calculation of the network property values is done automatically by using the Gephi and Phyton and NetworkX tools. Based on the calculation will generate value on each property for each e-commerce SCRM network. The calculation of descriptive analysis using SPSS and Excel.

e. Evaluation of SCRM Network Properties and Descriptive Statistical Analysis

The comparative results of SCRM network property values will be analyzed to find out which e-commerce have the highest engagement in social media in terms of SCRM network activity. The research has to compare the SCRM network properties to identify which e-commerce is most robust with the most activity in SCRM network and identify the five highest content characteristics in each e-commerce. Descriptive statistics analysis will be show the activity among e-commerce in produce their content statistics in a year and the intensity of engagement value based on three e-commerce result.

4. Results and Analysis

After doing the process of data filtering, then the process of network modeling on the network of the three ecommerce. The figures below are the visualization of the social network of Shopee, Tokopedia, and Bukalapak. This network modeling processed using Gephi software by applying Open Ord layout. From the network modeling results obtained by actors or nodes that are interconnected with other nodes. Those figures show each participating node on their Facebook pages. Through visualization process, then calculated on each metric in network property

by using software Gephi and NetworkX and figured out the content characteristics by descriptive statistics analysis. From the calculations obtained results from the property network on the network Shopee, Tokopedia, and Bukalapak. The network model that is formed from the network to the three e-commerce are as follows:

Figure 1.2 The Network Visualization of Shopee, Tokopedia, and Bukalapak

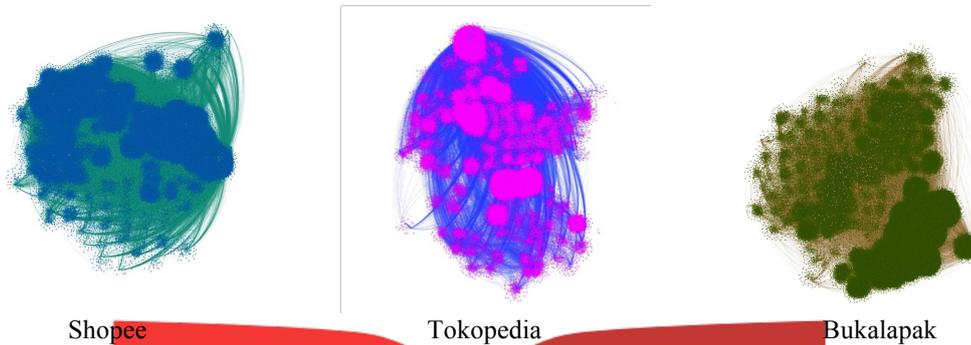


Table 4.1 A Comparison of E-commerce SCRM Network Matrix

No	METRIC	Shopee	Tokopedia	Bukalapak	Rank
1	Size of Likes	4,794,072	3,829,311	1,836,143	1) Shopee 2) Tokopedia 3) Bukalapak
2	Number of Node	722,869	1,157,395	1,209,083	1) Bukalapak 2) Tokopedia 3) Bukalapak
3	Number of Edge	2,196,934	1,598,928	1,426,602	1) Shopee 2) Tokopedia 3) Bukalapak
4	Average Degree	6,08	2,76	2,360	1) Shopee 2) Tokopedia 3) Bukalapak
5	Density	1.03x10 ⁻⁶	3.03x10 ⁻⁶	2.48x10 ⁻⁶	1) Tokopedia 2) Bukalapak 3) Shopee
6	Average Path Length	7,17	11,46	36,82	1) Shopee 2) Tokopedia 3) Bukalapak
7	Diameter	6	6	6	At the same level
8	Modularity	0.54	0.68	0.60	1) Tokopedia 2) Bukalapak 3) Shopee
10	Connected Component	6	6	168	1) Shopee 2) Tokopedia 3) Bukalapak

The table above shows the calculation results of SCRM service properties for three e-commerce. Based on the number of page likes, Shopee network is the highest, followed by Tokopedia and then Bukalapak. Otherwise, For the first property that is the size of the network, the most is the Bukalapak E-commerce with a value of 1,209,083 nodes in the network. Followed by Tokopedia with 1,157,395 nodes and Shopee with 722,869 nodes. Although smaller in size number of likes, Bukalapak network generated more conversations. The average degree indicates the average degree of the number of links that connect the nodes in the network [4]. The more links connecting the node means the better because it means the dissemination of information will be faster. The network that has the highest average degree score is Shopee with value 6,08 then followed by E-commerce Tokopedia with value 2,763 and Shopee with value 2,360. The higher value of average degree is better because it means that the actor or nodes “know” more actors within the network. Hence, the actors or nodes in Shopee network is more connected than the two-other e-commerce. It means more posts or more user comments are replied/shared/liked by other members, thus it creates more new connection. While density which means network density, where the denser network will result in greater density value. The greater the density value of a network

the better because it means the actors in the network more connected. Of the three e-commerce, which has the greatest density value is Tokopedia $3,03 \times 10^{-6}$, then followed by Bukalapak and Shopee with $2,48 \times 10^{-6}$ and 1.03×10^{-6} .

The average path length indicates the average distance between all pairs of nodes in the network (Barabasi, 2012). The smaller the average path length value the better, because it means the distance needed to convey information is not too far away. For the network with the lowest average path length is Shopee with value 7.17 then followed by E-commerce Tokopedia with value 11.46 and Bukalapak with a value of 36.81. Then, network diameter is indicating the furthest distance between two nodes [4]. The smaller the diameter value means the smaller the distance between the two nodes, the better because it means to convey information closer and easier. For networks with a third diameter e-commerce has the same value of 6. Modularity measures the strength of groups within the network. The higher the value of modularity means the more solid and strong groups in the network [4] of the three SCRM networks e-commerce above, which has the highest modularity value is Tokopedia e-commerce network with a modularity value of 0.680 followed by Bukalapak and Shopee with a value of 0.606 and 0.536. Previous research states that high modularity value indicates a good community structure. Connected component is simply described as a maximal set of nodes. The component is separate "pieces" of the graph such that there is no connection between the pieces. From the three networks, above, Shopee and Tokopedia has the smaller value of connected component, followed by Bukalapak. Smaller number of connected component is better; it means that the network does not separated into many tiny group.

Table 4.2 Content Characteristics of Three E-Commerce Summary

Description	Shopee	Tokopedia	Bukalapak
Post Type of User	99,87%	99,93%	99,93%
Post Type of page	0,13%	0,07%	0,07%
Post Type of Video	11%	8%	31%
Post Type of Photo	88%	38%	67%
Post Type of Link	1%	54%	2%
The Five Highest Engagement Value	82,859 ; 62,248 ; 55,846 ; 49,316 ; 47,352	506,099 ; 454,418 ; 446,534 ; 92,281 ; 56,980	445,610 ; 335,578 ; 111,473 ; 110,148 ; 102,004
Post Type of Five Highest Engagement Value	1) Photo 2) Photo 3) Photo 4) Photo 5) Photo	1) Video 2) Video 3) Video 4) Video 5) Link	1) Video 2) Video 3) Video 4) Video 5) Photo.

Based on Table 4.11 describes the three e-commerce characteristics. Post type of user represents the interaction of their audience in the network. Tokopedia and Bukalapak have the same value 99,93% it means both of them have the better participation of the audience in their social marketing campaign. Shopee has a good value even though smaller than Tokopedia and Bukalapak. Post type of page represents the content which is e-commerce page create to attract more conversation in the network. Shopee has the highest value 0,13% followed by Tokopedia 0,08%, then Bukalapak 0,07%. It shows Shopee has higher productive to creates their content to enhance the conversation.

In post type of video, Bukalapak has the highest value 31% it means Bukalapak is more active to create content of the video to approach their potential audience, followed by Shopee 0,13% then Tokopedia 0,08%. In post type of photo, Shopee at the top 88%. They active to push promotion into a photo and integrated the game for instance puzzle to increase the participation of their audience, followed by Bukalapak 67%, then Tokopedia 38%. In post type of link, Tokopedia became a leader on board as 54%. They active to create the post with a single link which is directly connected to their official website with interest in the promotion strategy. It followed by Bukalapak 2%, then Shopee 1%.

The five highest engagement shows the five contents created among e-commerce which has the top engagement value. According to the table shows that Tokopedia has the great value as much 506,099 followed by Bukalapak 445,610 then Shopee 82,859. In post type of five highest engagement value, it shows the top five contents type in each e-commerce. Shopee has the photo as their dominant content created. Tokopedia has 4 videos and a link. Then, Bukalapak has four videos and a photos.

Table 4.3 A Comparison of Descriptive Statistics Analysis Summary

	Shopee		Tokopedia		Bukalapak	
	Page post	EV	Page post	EV	Page post	EV
Maximum	8	95401	9	506713	7	445856

Minimum	0	0	0	0	0	0
Mean	2.44	6525.33	1.97	5736.08	2.11	4641.94
Std. Deviation	1.59	11523.39	1.56	41319.96	1.44	32067.17
N	964		782		834	

According to the result table 4.15 a comparison between three e-commerce; Shopee, Tokopedia, and Bukalapak on their Facebook pages using descriptive statistics model. The aim will show the activity among e-commerce in produce their content statistics in a year and the intensity of engagement value based on three e-commerce result. In page, post-Tokopedia has the highest value in the maximal value per day, 9 contents with the highest engagement value 506.731. They did a collaboration with some influencer and integrated it with the quiz that requires the audience to mentions and shares they thoughtful in the comment column. The highest engagement value came from 2 contents on May 23rd, 2017. First is linking, it has contained with their special opportunity to funding for the seller in Ramadhan. Second, Tokopedia created the inspirational video intitled “*Pulang di Hari Fitri atau Dedikasi pada Profesi*” or “Go home in Eid al-Fitr or Dedication on the Occupation?”. Most of their videos series have inspirational value and adapted in the seasons or trend in Indonesia. Their video’s characteristics made the audience curious regarding the attractive titled and made them have a particular opinion to share it. Second, followed by Shopee with the maximum post 9 contents then Bukalapak with 7 contents in a day.

In the minimum point, all of the e-commerce have the experience to post nothing at the time. They lost an extra valuable point to spread their awareness related their brand and social customer relationship. In a day when the e-commerce did not post their content, it means they lost one of opportunity to improve their engagement value on their Facebook pages. In the average over the period September 1st, 2016 to September 30th, 2017. Shopee has the highest average closes to 3 contents per day. The number of page post that their created has the significant effect to the number of their engagement value in their evaluation. It has 6.525,33 engagement value. Second, followed by Bukalapak with 3 contents and 4641.94 engagement value. Then, Tokopedia with 1.97 almost 2 contents and 5736.08 engagement value. In the standard deviation unit, the smaller value represents the better data distribution. Bukalapak has the smallest value with 1.44 in page post and 32067.17 engagement value. Second is Tokopedia with 1.56 in page post and 41319.96 engagement value. The third followed by Shopee with 1.59 in page post and 11523.39 in engagement value. Standard Deviation represents how small or far the gap number of value in the data processed in each e-commerce. *N* is a symbol which represents the quantity of the page post created over a year. As we can see, Shopee has the highest number of 964 contents have done created to improve their SCRM. Followed by Bukalapak with 834, then Tokopedia with 782 contents created.

5. Conclusion and Suggestion

Interaction with customers and the presence of companies in social media then becomes an important and measurable thing. One way to measure corporate interaction with customers is to calculate the network properties on the network topology that is formed from conversations in social media, in this case Facebook Pages. The creative content strategy can influence the success of SCRM. Based on the calculation result of SCRM network properties Shopee one of the best SCRM Network with the highest actively e-commerce to produce their content. Shopee network size that has the biggest market size than two e-commerce network turn out to have similar network properties (robustness) and engagement value. Although smaller in size, Tokopedia has the highest value engagement of post page. It is shown that some types of page posts generate higher engagement value, this pattern can become guidance in order to grow market network size. Tokopedia has the highest value of engagement Value with 506,099 in video, followed by Bukalapak with 445,610 in video, then Shopee 82,859 in photo. The characteristics of Shopee, photos become the dominant content type in Shopee strategy. In Tokopedia link as their dominant content post therefore has three videos which are gained the third highest engagement value and two links. In Bukalapak, video as their dominant.

Due to limitations on our computer power, we cannot do the more analytical process, thus this research can be developed further by using a more powerful computer using several approaches such as; 1). Extend the period of research to increase the number of sample. Therefore, a better data distribution can be obtained. 2). Approach by including more SNA metrics such as centrality, global and local clustering, components, structural holes 3). Using the same data to build model (learning) based on data mining algorithm in prediction technique.

For e-commerce that has not excelled in the value of network size properties can be increased by being more active in posting interesting content types and adding accounts in social media for certain categories; 1) Post daily — Keep the brand at the top of people's newsfeeds with humorous, engaging and entertaining content. 2) Use images or videos — Images greatly increase interaction rates for all social media platforms. 3) Be personal — Avoid sounding like a press release; show the audience that there are real people behind the brand. 4) Monitor — There are several free social media marketing apps which track shares, likes, and keywords associated with your brand. 5) Listen — Engagement is a two-way street. Hear what people are saying about your brand and respond to critiques in a constructive and positive way. 6) Contests — Contests and giveaways are a great method to increase interest in the brand. therefore, the audience likes to get the gift. 7) Cover all the social media bases —

Produce content for the top social media sites and cross-pollinate your content among them. For instance, link the more dynamic, image-oriented Instagram posts to Facebook.

Reference:

- [1] Alamsyah, A., Paranginangin, Y., & Nurhadi, G. (2014). Learning Organization using Conversational Social Network for Social Customer Relationship Management Effort. 2nd International Conference and Seminar on Learning Organization.
- [2] Anindia Indraswati, Alamsyah, A.(2015). Comparison of Social Network and Sentiment Analysis on Indonesia Bank SCRM
- [3] Arenas, G., J., R.-C., F.J, Ramirez-Correna, & P. E. (2013). Social identity, electronic word-of-mouth and referrals in social network services. *Emerald Insight*, 42, 1149-1166.
- [4] Barabasi, A.-L. (2012). *Network Science*. [Online], available on <http://bit.ly/2DxC0A2> [Oct 25th, 2017]
- [5] C. Porter, N. D. (2011). How to foster and sustain engagement in virtual communities. *California Management Review*, 5(4), 80-120.
- [6] Cheliotis, G. (2010). *Social Network Analysis*. [Online], available on <http://bit.ly/2FWry3s> [Oct 25th, 2017]
- [7] Chen, M. M. (2014). Big data: A survey. 19(2), 171-209.
- [8] Dutot, V. (2013). *A New Strategy for Customer Engagement: How Do French Firms Use Social CRM?* . *International Business Research*; 6(9), ISSN 1913-9004 .
- [9] E-Marketer. (2016, 06 23). In Indonesia, Facebook Remains the Most Popular Social Site. [Online], available on <http://bit.ly/2DtCKHv> [Oct 25th, 2017]
- [10] Ernest & Young. (2012). Voice of the customer Time for insurers to rethink their relationships. [Online], available on <https://go.ey.com/2mS6D90> [Oct 25th, 2017]
- [11] Gambetti, R. C. (2010). The Concept of Engagement, a Systematic Analysis of the Ongoing Marketing Debate., *International Journal of Market Research*.,52(6), 801-826.
- [12] Ghandour, A. (2015, May). Big Data Driven E-Commerce Architecture. *International Journal of Economics, Commerce and Management*, 3(5), 940-947.
- [13] Group, i. (2017, December 31). Persaingan e-Commerce Indonesia di 2017, Siapa Terpopuler? [Online], available on <http://bit.ly/2FWewmB> [Jan 5th, 2018]
- [14] Hanna, R. R. (2011). The power of the social media ecosystem. *Elsevier*, 54(3), 265-273.
- [15] L.D., H. (2013). The customer engagement/value interface: An exploratory investigation. *Australasian Marketing Journal*, 21(1), 17-24.
- [16] Laudon, K., & Traver, C. (2012). *E-commerce 2012, Business. Technology. Society*. Englang: Pearson Education.
- [17] Lipsman, A., Mudd, G., Mike , R., & Bruich, S. (2012). The Power of “Like” Through Social-Media Marketing. *Journal of Advertising Research*, 40-52.
- [18] Liu, B. (2007). *Web Data Mining; Exploring Hyperlink, Content, and Usage Data*. New York, USA: Springer.
- [19] Mosadegh, M. J., & Behboudi, M. (2011). Using Social Network Paradigm For Developing A Conceptual Framework in CRM. *Australian Journal of Business and Management Research*, 1, 63-71.
- [20] Passmore, D. L. (2012). *Social Network Analysis, a free wiki book*. PennState University. [Online], available on <http://bit.ly/2DVjKi5> [Oct 25th, 2017]
- [21] Pawar, A. (2016). Big Data Mining: Challenges, Technologies, Tools and Applications. *Database Systems Journal*, 7(2), 28-33.
- [22] R.J Brodie, L. (2011). Customer Engagement: Conceptual Domain Hollebeek, , Fundamental Propositions, and Implications for Research. *Journal of Service Research*, 14(3), 252-271.
- [23] Seddon, K., N. C., S., & K. C, P. (2008). Creating a Model to Examine Motivation for Sustained engagement in Online Communities. *Journal Education and Information Technologies*, 12(1), 17-38.
- [25] Stats, I. W. (2017, 06 30). Usage Stats Facebook and Population Statistics. [Online]. Available on internetworldstats: <http://bit.ly/2mWTUTj> [October 25th, 2017]
- [26] Surendran, S. (2017) Shopee a rising competitor. [Online], available on The Edge Markets: <http://bit.ly/2BejWWp> [Jan 5th, 2018]
- [27] Tsvetovat, M., & Kouznetsov, A. (2011). *Social Network Analysis for*
- [28] Xincheng Wang, F. L. (2008). Social Computing-Based Trust Establishment in E-Commerce . *International Conference on Internet Computing in Science and Engineering*, 247.
- [29] Pinheiro, C. (2011). *Social Network Analysis in Telecommunications*. New Jersey: John Wiley & Sons, Inc.
- [32] Kelley, J. T. (2002, 04 13). Using Graphs and Visuals to Present Financial Information.
- [30] McCann, U. (2008). Power to the people social media tracker. Wave 3.