IMPLEMENTATION E-COMMERCE OFTO IMPROVE CUSTOMER SATISFACTION AND LOYALTY

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By being driven by the need to improve performance and save time and cost and e-commerce becomes one of the important communication media in meeting the need to achieve competitive advantage for the company. This study studies the application of e-commerce, the relationship between customer expectations of e-commerce quality, customer satisfaction, and also customer loyalty. The sample technique in this study used a purposive sampling method with a sample of 35 respondents. Analytical techniques using Partial Least Square (PLS) using SmartPLS software.
The findings obtained are the influence of expectations on the quality of e-commerce. The influence of e-commerce quality on customer satisfaction. Expectations do not affect satisfaction. Impact of final satisfaction on loyalty. The indirect effect of customer expectations on customer satisfaction is greater than the direct effect, it shows the role of the predicted e-commerce quality (system quality, information quality, service quality) which is able to continue to increase customer satisfaction rather than just based on customer expectations. So they will lead to customer loyalty.

Keywords: E-commerce, Quality, Hope, Satisfaction, Loyalty.

I. INTRODUCTION

Today's technological advancements have developed rapidly so that changes occur in all aspects of life. Driven by the need to improve performance and save time and costs, the internet has become one of the most important communication media in meeting those needs. Globalization pressure is also a factor driving external diffusion of E-commerce in various countries (Wong, 2003; Gibbs et al. 2003; Palacios, 2003; Chen, 2003; Tigre, 2003; Koenig and Wigand, 2004; Chelliah et al., 2010).
The need for information to support the achievement of competitive advantage for companies is essential. "Information is an important media that plays a role in decision making. Quick information will help marketers win the competition.
The internet is the most widely used source of information by companies because it can reach all regions, potential and fast to convey a variety of information universally, quality, and requires almost no cost (Adelaar, 2000; Talha et al.). In line with the development of the internet, a new understanding of marketing paradigms in the form of market / consumer-oriented marketing emerges or marketing revolution in the form of electronic marketplaces (Arnott and Bridgewater, 2002: 86; Bakos, 1999: 1613; Chaffey et al., 2000; Eid and Trueman, 2002: 54) " quoted from Sutejo (2006).
This study seeks to see the extent of the relationship between the application of e-commerce, the relationship between e-commerce quality and customer expectations of customer satisfaction, and also customer loyalty. This causal relationship analysis is expected
to be useful for companies to understand customer satisfaction and loyalty in a more systematic and integrated manner.

II. LITERATURE STUDY AND HYPOTHESES

All forms of trade transactions / merchandise of goods or services using electronic media are often referred to as E-commerce (Electronic commerce). In the use of E-commerce the company must be able to provide services that are easily accessible and also rich in information so that it can still be a marketing medium while helping consumers in finding information about the company's products so that time and distance are no longer an obstacle. Carter (2002) states that E-commerce is all forms of transactions related to commercial activities, both organizational and individual based on the management and transmission of digitalized data, including text, sound, and visual images. Fingar (2000) also states that e-commerce is an infrastructure provider for companies in expanding internal business processes to external without having to face time and space obstacles.

DeLone and McLean (1992) conducted an in-depth study of the success of information systems, they found that the success of an information system can be represented by the quality of the system, the quality of information, consumption of output (use), user satisfaction, influence of information systems on user habits and on performance organization. Then DeLone and McLean (2003) revised the model and called it the success model of the updated DdanM information system (updated DdanM IS Success model). Several variables were added, including: service quality, intensity of use, and net benefits (a combination of individuals and organizational impact).

Customer expectations indicate the previous consumption experience of a customer with a company's product or service, including experience gained from marketing communications and word of mouth information. Expect customers to have a nature not fixed or changeable to follow technological, social, and cultural developments the economy. Things that can create customer expectations (Yu, 2005; Robledo, 2001: Hart, Heskett, and Sasser, 1990; Zeithaml, Berry, and Parasuraman, 1993; Zeithaml, Parasuraman, and Berry) quoted from Wibowo, Mulyono (2009) which are then modified to fit the object of research are as follows: Communication, expectations, previous experience and needs.

Customer satisfaction is the perception of customers whose expectations have been met or exceeded. According to Engel (Tjiptono, 1988), customer satisfaction is an after-sales evaluation where the alternative chosen at least gives the outcomesameor exceeds customer expectations. Meanwhile according to Kotler (1995), In general, satisfaction is the feeling of pleasure or disappointment from someone who comes from the comparison between his impression of the performance / results of a product and his expectations quoted from Wibowo, Mulyono (2009). To create customer satisfaction a company must be able to meet the needs of consumers called “The Big Eight factors” which are generally divided into three categories as follows (Hannah and Karp, 1991), Quoted from Lo Khiang et al (2010): Factors related to the product: Product quality, Relationship between value to price, Product form, Reliability. Factors related to service: Guarantees, Responses and ways of solving problems. Factors related to purchasing: Employee experience, convenience and comfort. Quoted from Lo Khiang et al (2010).

Loyalty is the attitude and behavior of customers to buy or re-transaction to the company. Bloemer and Kasper (1995), loyalty is interpreted as true loyalty compared to repurchase behavior. Zeithaml et al. (1996) states loyalty is a multi-dimensional concept and includes positive and negative responses. However, every customer may not always be satisfied with the service. There are several indicators in measuring loyalty referenced in research from Selnes (1993 in Smith and Wright, 2004), Chow and Holden (1997) and Musry (2004), namely repurchase, recommendations, continuation of relationships and commitment.
This study uses variables used by several previous studies, including: Quality of e-commerce (DeLone and McLean, 2003), customer expectations (Yu, 2005; Robledo, 2001: Hart, Heskett, and Sasser, 1990; Zeithaml, Berry, and Parasuraman, 1993), customer satisfaction (Hannah and Karp, 1991), customer loyalty (Selnes, 1993; Chow and Holden, 1997; Musry, 2004).

**Customer expectations and e-commerce quality**

Customer expectations show previous consumption experience and customers with a company’s product or service, including experience gained from marketing communications and word of mouth information (Johnson et al., 2001). Customer expectations should be positively related to quality and value (Fornell et al, 1996) Customer knowledge should be like expectations that accurately reflect current quality. Therefore customers are expected to have rational expectations and reflect the ability of customers to learn from experience and predict the level of quality and value they receive (Howard, 1977), quoted from Wibowo and Mulyono, 2009. Seeing the findings of several experts, the hypothesis will be submitted are as follows;

**H 1**: Expectation customers a positive influence on the quality of e-commerce.

**The quality of e-commerce (system quality, information quality, service quality) and customer satisfaction**

Based on the perspective of customers, quality is the result of the performance of products and services. Quality perception can be defined as the degree of customizations and the absence of deficiencies or defects, or how product reliability meets the specifications desired by customers (Johnson and Ettlie, 2001). Some researchers have questioned the causal relationship between perceived quality and customer satisfaction (Dabhalkor, Shepherd, and Thorpe, 2000), Inconsistencies in the definition and measurement of perceived quality and customer satisfaction have also led to combining findings related to the relationship between perceived quality and customer satisfaction (Sousa and Voss, 2002, Choi and Eboch, 1998; Hardie, 1998). Current research has confirmed a clear pattern where satisfaction is a consequence or result of behaving from quality (Gallarza and Saura, 2006; Green and Boshoff, 2002. The higher the perception of quality, the higher the level of customer satisfaction. This assumption is in line with theoretical perspectives that states that customer satisfaction is a result of a favorable evaluation (favorable) consumers of the quality of goods and services (Liu, 2005; Babakus, Bienstock, and van Scotter, 2004). Quoted from Wibowo, Mulyono (2009).

Based on the findings, the following hypothesis is proposed:

**H 2**: Quality of e-commerce has a positive effect on customer satisfaction, customer expectations and customer satisfaction

The predictive role of these expectations also shows that expectations should have a positive influence on overall customer satisfaction (Anderson, Fornell, and Lehmann, 1994). previous consumption experience from customers with a company’s product or service, including experience gained from marketing communications and word of mouth information (Johnson et al., 2001). Expectations are worth considering to predict a company’s ability to deliver future performance, and should have a positive influence on customer satisfaction. A company’s communication with its customers, previous experience, advertising, service recovery, promises, informal recommendations, formal recommendations, prices paid, personal needs, image or image of the company, and sales staff, all of which can create customer expectations (Yu, 2005; Robledo, 2001: Hart, Heskett, and Sasser, 1990; Zeithaml, Berry, and Parasuraman, 1993; Zeithaml, Parasuraman, and Berry). Customer expectations are defined as the level of quality that customers expect to receive. Customer expectations are also considered to be positively related to customer satisfaction, perceived value, and perceived quality. Quoted from Wibowo, Mulyono (2009). Based on the findings regarding customer expectations. Proposed hypothesis as follows.

**H 3**: Customer expectations have a positive effect on customer satisfaction.
Customer Expectations, Quality E-commerce, Customer Satisfaction

The predictive role of expectations indicates that expectations should have a positive influence on overall customer satisfaction (Anderson, Fornell, and Lehmann, 1994). Expectations are worth considering to predict a company’s ability to deliver future performance, and should have a positive influence on customer satisfaction. Current research has confirmed a clear pattern where satisfaction is a consequence of quality (Gallarza and Saura, 2006; Green and Boshoff, 2002). The higher the quality, the higher the level of customer satisfaction. Quoted from Wibowo, Mulyono (2009). With the quality of e-commerce in accordance with customer expectations, it will increase customer satisfaction. Based on these findings, the proposed hypothesis as follows:

H4: The indirect effect customer expectations on customer satisfaction through the quality of e-commerce is greater than the direct effects.

Customer satisfaction and customer loyalty Excellent practice of service quality has been proven that customer satisfaction will significantly lead to customer quality (Caruana et al., 2000: Caruana, 2002). On the other hand, customer satisfaction has often been suggested to be a major determinant of loyalty (Lam and Burton, 2006). Ehigie (2006) shows that there is a significant positive relationship between customer satisfaction and loyalty. Quoted from Wibowo, Mulyono (2009). Based on the description above, this research proposes the following hypothesis.

H5: Customer satisfaction positive effect on customer loyalty.

III. RESEARCH METHOD

Method and Data Collection Techniques

This study uses primary data where data obtained directly from the research object. And also secondary data where data is obtained from other sources that support this research. As for the respondents in this study are companies that are consumers of the NKH (scales company Business to Business / B2B) that uses e-commerce. Data collection is carried out in several ways, namely: interview, documentation, questionnaire methods. After the research instrument has been prepared the next step is to conduct a trial involving 30 respondents to ensure the validity and reliability of the research instrument. If the data obtained is invalid and reliable, the question items will be revised so that respondents can more easily understand the purpose of the questionnaire. Which is then distributed to respondents and tested again. If the research instrument has been declared valid and reliable, then the research instrument will be said to have a good calibration for the size of each variable size studied. Then the research instruments were distributed directly throughout the target sample of 35 respondents. Data obtained from the distribution of research instruments as a whole, then examined, tabulated, screened, and analyzed to answer and discuss the issues raised.

The procedure of determining the sample from this study uses random sampling based on consideration (purposive sampling). According to Rangkuti (2008), the purposive sampling method is the selection of respondents who are chosen randomly or deliberately chosen.

Model research

This uses a form of Structural Equation Modeling (SEM) based variance or component-based SEM, known as Partial Least Square (PLS) using SmartPLS software version 1.0.1. To test empirical models and hypotheses proposed in this study. PLS is an analytical method powerful, because it does not assume the data must use certain scale measurements, is used on small sample sizes (30-50 units or <100 units), and can also be used to confirm theories (Ghozali, 2008; Hair et al., 2010).

In this study, the empirical model of this study consists of two models, namely: 1) Inner model (structural model) which specifies the relationship between latent variables. The exogenous variables are the relationship specifications of the variable customer Expectation(X)
and variables endogenous (bound) are Quality e-commerce (Y1), Customer Satisfaction (Y2) and Customer Loyalty (Y3). 2) Outer Model (measurement model) specifies relationship between statement block indicators and their latent variables.

IV. RESULTS AND DISCUSSION

Stages and Test Results The number of respondents analyzed was 35 respondents. The sum of all manifest variables (indicators) is 28 questions that are presented to the 4 constructs, namely: Quality of e-commerce, customer expectations, customer satisfaction, customer loyalty. The model evaluation consists of two parts, namely the evaluation of the measurement model and the evaluation of the structural model.

Measurement of Outer Model

The first part of testing the outer model is convergent validity. Indicators are considered valid if they have an value outer loading > 0.5 and a T-statistical value > 1.96 (at a large degree of freedom or n = 500, the statistic is close to Z. Meanwhile, α = 0.05 is a critical value of 1.96).

**TABLE 1**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Indicator / Item</th>
<th>Outer Loading</th>
<th>T-Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>customer expectations (X)</td>
<td>Communications (X.1)</td>
<td>0.914</td>
<td>36.764</td>
</tr>
<tr>
<td></td>
<td>Expectation (X.2)</td>
<td>0.658</td>
<td>4593</td>
</tr>
<tr>
<td></td>
<td>Requirement (X.3)</td>
<td>0.059</td>
<td>31.89</td>
</tr>
<tr>
<td>Quality e-commerce (Y1)</td>
<td>Promise (X.4)</td>
<td>0.0775</td>
<td>7133</td>
</tr>
<tr>
<td></td>
<td>Quality system (Y1.1)</td>
<td>0.0950</td>
<td>59.447</td>
</tr>
<tr>
<td></td>
<td>Quality information (Y1.2)</td>
<td>0.0779</td>
<td>90.65</td>
</tr>
<tr>
<td></td>
<td>Quality of service (Y1.3)</td>
<td>0.0944</td>
<td>53.936</td>
</tr>
<tr>
<td>customer satisfaction (Y2)</td>
<td>Quality (Y2.1)</td>
<td>0.673</td>
<td>4.636</td>
</tr>
<tr>
<td></td>
<td>Reliability (Y2.2)</td>
<td>0.555</td>
<td>3.576</td>
</tr>
<tr>
<td></td>
<td>Guarantees (Y2.3)</td>
<td>0.0810</td>
<td>8.717</td>
</tr>
<tr>
<td></td>
<td>Responses and ways of solving problems (Y2.4)</td>
<td>0.764</td>
<td>7.049</td>
</tr>
<tr>
<td></td>
<td>Convenience and convenience (Y2.5)</td>
<td>0.762</td>
<td>7.264</td>
</tr>
<tr>
<td>Customer loyalty (Y3)</td>
<td>Transaction habits (Y3.1)</td>
<td>0.780</td>
<td>6.713</td>
</tr>
<tr>
<td></td>
<td>Repurchase (Y3.2)</td>
<td>0.869</td>
<td>14.965</td>
</tr>
<tr>
<td></td>
<td>Recommendations (Y3.3)</td>
<td>0.810</td>
<td>9.327</td>
</tr>
<tr>
<td></td>
<td>Commitments (Y3.4)</td>
<td>0.690</td>
<td>4.431 It</td>
</tr>
</tbody>
</table>

Can be seen that the entire item is considered valid as a measure of the variable because it meets the criteria of convergent validity.

The second part is testing discriminant validity. Recommended AVE value > 0.50.

**TABLE 2**
EXAMINATION *discriminant validity*

<table>
<thead>
<tr>
<th>Variable</th>
<th>AVE</th>
<th>√ AVE</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>Y1</td>
<td>Y2</td>
</tr>
<tr>
<td>EXPECT</td>
<td>0.527</td>
<td>0.726</td>
<td>1.000</td>
</tr>
<tr>
<td>QUAL-E COM</td>
<td>0.804</td>
<td>0.897</td>
<td>0.864</td>
</tr>
<tr>
<td>Satisfy</td>
<td>0.506</td>
<td>0.711</td>
<td>0.894</td>
</tr>
<tr>
<td>LOYAL</td>
<td>0.791</td>
<td>0.653</td>
<td>0.659</td>
</tr>
</tbody>
</table>

There is some correlation results latent variable lower from the root value of AVE (√AVE). So the relationship is *discriminant validity* said to be quite good.

**TABLE 3**

**VALUE OF COMPOSITE RELIABILITY**

<table>
<thead>
<tr>
<th>Variable</th>
<th>ReliabilityComposite</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXPECT</td>
<td>0.811</td>
</tr>
<tr>
<td>QUAL E- COM</td>
<td>0.924</td>
</tr>
<tr>
<td>Satisfy</td>
<td>0.834</td>
</tr>
<tr>
<td>LOYAL</td>
<td>0.869</td>
</tr>
</tbody>
</table>

Third, test the reliability of composite, has a value *compositereliability* above 0.70 (pc ≥ 0.70). This means that the indicator is reliable in measuring research variables.

**Evaluation Inner Model**

Criteria *Goodness of Fit*, $Q^2 > 0$ indicates the model has *predictive relevance*, conversely if the $Q^2 ≤ 0$ value indicates the model lacks *predictive relevance*. The quantity $Q^2$ has a value with a range of $0 < Q^2 < 1$. $Q^2$ which is getting closer to the value 1 means that the model is getting better.

**TABLE 4**

**GOODNESS OF FIT**

<table>
<thead>
<tr>
<th>Structural Model</th>
<th>Variable endogenous</th>
<th>R-square</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>QUAL E- COM</td>
<td>0.746</td>
</tr>
<tr>
<td>2</td>
<td>Satisfy</td>
<td>0.893</td>
</tr>
<tr>
<td>3</td>
<td>LOYAL</td>
<td>0.600</td>
</tr>
</tbody>
</table>

Calculation: $Q^2 = 1 - (1 - R_1^2)(1 - R_2^2)(1 - R_3^2)$
$Q^2 = 1 - (1 - 0.556)(1 - 0.797)(1 - 0.36) = 0.943$

Value $Q^2$ (0.943) approaches number 1. Thus, the results of this evaluation provide evidence that the structural model has a good *goodness of fit model*.

**Hypothesis Testing**

**TABLE 5**

**RESULTS OF TESTING DIRECT EFFECTS AND MEDIATION VARIABLES**
No Relationship between Coefficient Path (Bootstrapping) $T$-Statistic Information

1 Customer Expectations (X) $\Rightarrow$ quality of e-commerce (Y1) 0.0883 22.643 Significant
2 Expectations of customers (X) $\Rightarrow$ customer satisfaction (Y2) 0.0402 17.75 No Significant
3 Quality of e-commerce (Y1) $\Rightarrow$ customer satisfaction (Y2) 0.0574 30.21 Significant
4 Customer satisfaction (Y2) $\Rightarrow$ customer loyalty (Y3) 0.0806 9.614 Significant

Testing of Relationships Between Variables Without Using Mediation Variables

Customer Expectations (X) $\Rightarrow$ customer satisfaction (Y2) 0.0905 18.867 Significant
Customer satisfaction (Y2) $\Rightarrow$ customer loyalty (Y3) 0.0804 7.831 Significant

Customer Expectations (X) proved positive and significant effect on the quality of e-commerce (Y1). The quality of e-commerce (Y1) positive and significant impact on customer satisfaction (Y2). Customer expectations (X) are proven not to have a positive and significant effect on customer satisfaction (Y2). Customer satisfaction (Y2) has a positive and significant effect on customer loyalty (Y3).

### Table 6
RESULTS OF TESTING MEDIATION VARIABLES AND INDIRECT EFFECTS

<table>
<thead>
<tr>
<th>No</th>
<th>Mediation Variable quality variables e-commerce in Relationships:</th>
<th>(a)</th>
<th>(b)</th>
<th>(c)</th>
<th>(d)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Customer expectations (X) $\Rightarrow$ customer satisfaction (Y2)</td>
<td>0.0402</td>
<td>(-)</td>
<td>0.905</td>
<td>(+)</td>
<td>0.0883 (+) 0.574 (+)</td>
</tr>
<tr>
<td>2</td>
<td>Customer satisfaction (Y2) $\Rightarrow$ customer loyalty (Y3)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Summary of Effects Direct, Indirect and Total Effects

<table>
<thead>
<tr>
<th>Relationship Variables</th>
<th>Direct</th>
<th>Effects Indirect</th>
<th>Effect Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer expectations (X) $\Rightarrow$ Quality of e-commerce (Y1) customer satisfaction (Y2)</td>
<td>0.402</td>
<td>0.507 (0.883 x 0.574)</td>
<td>0.909</td>
</tr>
<tr>
<td>Customer satisfaction (Y2) $\Rightarrow$ customer loyalty (Y3)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Description:

(+) : significant
(-) : Not significant

Quality of e-commerce (Y1) shown to mediate significant indirect effects customer expectations (X) to customer satisfaction (Y2) with path coefficient of 0.507. These results give the sense that the stronger the quality of e-commerce on customer expectations can increase the effect of customer satisfaction. In addition, it can be said that the quality variable e-commerce is a key mediator on the indirect effect of direct customer expectations on customer satisfaction, because it mediates fully (full mediation).

The path coefficient on the indirect effect of customer expectations on customer satisfaction and loyalty through the mediation of quality e-commerce is greater (0.507) than the direct effect path coefficient (0.402) with a total effect of 0.909. Thus, mediation through quality e-commerce can have a greater effect on the indirect effect of customer expectations on customer satisfaction and loyalty than the direct effect.
Hypothesis testing results show that customer expectations positive and significant impact on the quality of e-commerce. These results mean that the quality of e-commerce based on customer expectations will increase. This finding is consistent with research from Fornell et al (1996) and Wibowo and Mulyono (2009) which states that there is a significant relationship between customer expectations and quality.

Hypothesis testing results show that the quality of e-commerce has a positive and significant effect on customer satisfaction. These results mean that the higher the quality of e-commerce, customer satisfaction is also will get higher. Consistent with research from Liu (2005), Babakus, Bienstock, and van Scotter (2004), Wibowo and Mulyono (2009).

Hypothesis testing results indicate that customer expectations no positive and insignificant effect on customer satisfaction. These results mean that customer expectations that are too high or excessive will cause dissatisfaction. According to research conducted by Samuel (2006), states that high customer expectations will encourage a low level of satisfaction which is then strengthened by research conducted by Wibowo and Mulyono (2009) which states that there is no positive / significant effect on customer satisfaction.

The test results show that there is an indirect relationship of quality e-commerce with customer expectations on customer satisfaction, but the indirect mediating effect on quality e-commerce is higher than the direct effect. This can be interpreted that the high quality of e-commerce will meet the expectations of the company’s customers that will bring customer satisfaction that leads to loyalty. This finding is consistent with research from Fornell et al (1996), Liu, 2005; Babakus, Bienstock, and van Scotter, 2004, Wibowo and Mulyono (2009) which states that there is a significant relationship between customer expectations and quality and quality with customer satisfaction.

The results of hypothesis testing show that customer satisfaction has a positive and significant effect on customer loyalty. These results mean that the higher the satisfaction felt by the customer, the more loyal the customer will be. This finding is consistent with research conducted by Ehigie (2006), Lam and Burton (2006).

CONCLUSION

This research is motivated by various studies related to the construct raised in this study. The research objective is to see the extent of the relationship between customer expectations of quality e-commerce, customer satisfaction, and customer loyalty. This model is used to test primary data obtained through a questionnaire of 35 respondents.

There are five hypotheses built in this study, after testing the proposed hypotheses, the following conclusions are generated: (1) Customer expectations (X) have proven to have a
positive and significant effect on quality e-commerce (Y\textsubscript{1}). (2) E-commerce quality (Y\textsubscript{1}) has a positive and significant effect on customer satisfaction (Y\textsubscript{2}). (3) Customer expectations (X) have no positive and significant effect on customer satisfaction (Y\textsubscript{2}). (4) The indirect relationship of quality e-commerce (Y\textsubscript{1}) with customer expectations (X) to customer satisfaction (Y\textsubscript{2}) is higher than the direct effect. (5) Customer satisfaction (Y\textsubscript{2}) has a positive and significant effect on customer loyalty (Y\textsubscript{3}).

This study has several limitations where there are differences in perceptions between the authors and research respondents, although the authors have tested the research instrument to minimize this.

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