Research

How Ride Hailing services Utilized Technological Innovation as One of Their Strategies in Creating Blue Ocean? Case Study Based on Go-Jek, Bandung, Indonesia

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Abstract: Technological Innovation (TI) is acknowledged as a Value Innovation. Companies that do not utilize TI, often end up with innovation that breaks new ground, but does not unlock potential groups of customers. Its revolution has driven global development over the past two decades in an exceptional way which has paved ways for many new business ventures from various sectors in creating huge market share within the present market. TI has been used with those ventures as a strategy along with other strategies. In ride hailing sectors, Go-Jek Indonesia is one among those new ventures that has successful managed to use TI and hence grow and develop into a very large competitive company in short period of time. This study intended to examine how these strategies have helped in creating competitive advantage as well as addressing transportation challenges. A literature review of Technological Innovation theory and strategies has been a tool in creating a strong theoretical foundation for this study. Where Generic strategies and Intensive Growth strategy has been reviewed in light of Technological Innovation strategies. The study methodology has used a quantitative approach. The quantitative approach is descriptive in nature of the results obtained from primary and secondary data sources. The data results obtained from the primary source were utilized for statistical procedures. This study has conclusively found that to win customer satisfaction, certain important factors such as application functionality and usefulness of the ride hailing service has to be attained. The study went further to understand the underlying strategy that has influenced Go-Jek Indonesia to attain its competitive advantage. This study concluded that a mix of cost leadership and product differentiation strategies (that is focus strategy) together with technology has made a strong impact in increasing their competitive advantage. The study recommends ride hailing services to accept the improvements of communication channels, the need for ongoing training of their contractors and staff, and the need to be aware of the government rules and regulations.

Keywords: Technological Innovation; Value Innovation; Ride hailing application; Blue Ocean Strategy; Go-Jek, Indonesia; competitive market.

Introduction
Innovation without value tends to be technology driven, market pioneering or futuristic, often going well beyond what buyers are ready to accept and pay for. While Value Innovation is a new way of thinking about and executing a strategy that results in the creation of a Blue Ocean (unexplored new market spaces) and breaking from the competition (Kim and Mauborgne, 2005). It is regarded as the cornerstone of Blue Ocean strategy which is one of the most commonly accepted ideas of competition based strategy: the value cost trade off. It is conventionally believed that companies can either create greater value for customers at a higher cost or create reasonable value at a lower cost. These strategies make a choice between differentiation and low cost. In contrast, those who seek to create Blue Oceans pursue differentiation and low cost simultaneously.

Technological Innovation as defined by Wikipedia is; “a continuous process, within an internal or external venture, build-out to create value with innovation; starts with the ideation process and ends-up with the commercialization of a viable product or service, in response to a proven market, need.”

The Frascati Manual (OCDE, 2002) defines innovation as the transformation of an idea into a new product, or into the improvement of a product that is introduced in the market, or new production systems and its diffusion, commercialization and utilization. While technology can be understood as a set of scientific and empirical knowledge, skills, experience and organization required to produce, distribute, commercialize and use goods and services (Moraes et al, 2010).

Based on this, it is important to distinguish between Value Innovation as opposed to Technology Innovation and market pioneering. Technological Innovation needs to be acknowledged as something that has made a remarkable transformation in countless sectors both in developed and developing countries (Schillo, 2017). It has also made it possible for many companies to thrive and survive in a business world that is progressing continuously even though seems as very difficult to set and implement (Moraes et al, 2010). Current reports show that Technological Innovation is widespread in many places, Indonesia being one of those places. TI has been a critical link towards sustainable growth and development within many organization and business firms (Anadon, 2016). The changes that have accompanied this Technological revolution within these companies are mainly in regards to products and services that these companies offer.

Few business ventures have experienced this transformation as much as the Taxi industry. This industry has been completely disrupted and overturned with the introduction of ride-hailing services. The users of taxis were and are still experiencing many challenges; these
include long hours in traffic, the concern with comfort and random price changes. But with the rise of ride-hailing services, these challenges have been reduced to a great extent. Furthermore, the rapid use of ride-hailing services applications has created new products and services that simplify the life of the users and bring more customer satisfaction. Another benefit has been the lack of irrelevant competition with other providers.

**Statement of the Problem**

The rise of ride-hailing services has brought tremendous change that has provided options to people especially in relation to transportation and with job opportunities. Its effectiveness has increased customer satisfaction and contractors opportunities (owners and drivers) and also provided sustainable growth for firms within that industry (Han & Metcalfe, 2017). Now there is greater competition between ride-hailing firm and other service providers. This study will try to answer the question: What are the strategies behind Technological Innovation that has been used by Go-Jek Indonesia to create a competitive advantage and a Blue Ocean?

**Research Objectives**

1. To identify the effect of strategies behind the technological Innovation on the competitive advantage within Go-Jek Indonesia.
2. To identify the importance of Technological Innovation and Value Innovation towards offering products and services and hence creating Blue Ocean.

**Literature review**

**Technological Innovation theory**

Empirical and theoretical studies have shown that in a product oriented company, having a different technological policy or strategy will result in a different level of Technological Innovation, thus having an impact on the new product development. Technology is an intangible asset that assists companies to survive in a competitive environment which are supported by company experiences in management, production, manufacturing and R&D. Within the same industry, companies with a technological edge will have better profitability, as well as being faster in developing new product lines or other Technological Innovation (Hsieh & Chen, 2011).

There are two types of Technological Innovation: radical product innovation and incremental product innovation. The first is established on the base of boosting product performance, whereas the second is established on the minor improvements of a product, a service or a production process. Companies with different patterns of TI will have different performance in regards to product innovation, with a clear advantage going to radical innovation.
patterns of TI that have arose in respect to a given product or services, has been advanced from the result of many different factors which include demand; public and governmental support, imitation and research intensity. When trying to clarify TI, the patterns which emerge can be used to provide support for the causal factors nominated or methodology advocated, by the researcher (J.E Butler, 1988)

It may be possible to better understand and exploit the strategy-technology linkage by anticipating patterns of Technological Innovation as part of an evolutionary process. These theories suggest a broader scope for planning, which relates goals developed in the formulation process of TI. The product-process life-cycle theory of Utter back and Abernathy (1975; Abernathy and Utterback, 1978) and the meta-learning concept of Sahal (1981) are two attempts to explain the actual pattern of technological progress. They have highlighted four stages of Technological Innovation. These stages are: the introduction stage, the growth stage, the maturity stage and the decline stage before extinction. All these stages are critical in any business environment. Starting with the introduction stage, where technology development can be very slow and costly since a lot of time is invested in R&D occurs. Then during the growth stage, where the degree of understanding about technology is increased through experience, expertise, and trial and error which is accumulated and combined to release a dramatic advancement of technology. Next is the maturity period, where technological development takes a more radical form, but the speed of advancement is slower than that of the previous stage. As it goes through this period of maturity technological advancement reaches a peak, but then its rate of advancement becomes very slow before inherent limit contribute to decline (McGrath 1998; Narayanan 2001). In reality, technology is not always advanced to its limit since there is a new substitute, which is constructed on completely new technological form that is not linked to present technologies. The old technology overpowers limitations in the market by meeting prevailing similar market demand to replace it with present technologies (J. Byun et al, 2017). Many companies tend to be hesitant to invest in the earlier stage of development of a new technology, due to the fact that it can cause lower earnings than investment in present technologies and it may become obsolete in a very short time (I.J Petrick, 2003). However, if it is considered that a discontinuous technology is advancing or sometimes innovative or that existing technologies cannot be further advanced, companies will expect to generate much higher profit by making an investment in new technologies.

**Concept of Strategies**
Strategy is a unified and integrated plan that relates the strategic advantages of the firm to the challenges of the business environment and that is designed to ensure that the basic objectives of the enterprise are achieved through proper execution by the organization (Aldehayyat, 2011). This study will blend a number of strategies, Technological Innovation strategy and Blue Ocean Strategy. These strategies can be used to create competitive advantage, for example, in the ride hailing services sector, companies can manage to develop a Blue Ocean.

**Technological Innovation Strategies**

In strategic management research, technology has been suggested as an important consideration, which has strategic importance because it often represents either an opportunity or threat, which needs to be considered during the scanning phase (e.g. Grinyer, Al-Bazzaz and Yasai-Ardekani, 1986, O'Connell and Zimmerman, 1979). Various scholars continue to advice that technology should not replace any existing tools, but rather to create linkages between technology and existing strategies. Also it should be made in such a way as to improve product quality or product cost and hence creates new market opportunities. That is to say a technology strategy becomes a central driver for the company, then technological considerations form the basis for strategic planning, guiding the fundamental question of how to establish a competitive advantage and how to ensure the survival of the firm (Morares et al, 2010). This new technology and process which has been introduced by various companies, has focused more on helping implement the changes and resulted in the appearance of Technological Innovation. The introduction of the new and different perspectives has helped to establish the strategy-technology relationship which increases the productivity and competitiveness of organizations (Moraes et al, 2010).

Within a Technological Innovation strategy, Generic and Intensive strategies will be incorporated in creating competitive advantage. Michael Porter (1985) has highlighted three key generic strategies that brands can use to build a source of sustainable competitive advantage. These three strategies are cost leadership, product differentiation and focus strategy.

Intensive growth strategies are those strategies which demand greater efforts to improve the performance of existing products in the market (Zkjadoon, 2016). Intensive strategy has been used by various brands to grow their market share and to expand. Whereby it deals with current and new products in the market and its main objectives is on how to increase the market share as well as find ways to develop product commensurate with market demand (Kotler, 1976). This can help a firm grow faster in the market and make the company stronger. **Intensive growth** can best be explained with reference to the product market...
expansion grid (Bhasin, 2017). There are four intensive growth strategies that the brand can use to grow their market share and to expand their market presence. These strategies are as follows:

Market penetration is the strategy that organizations can use to enhance their market share through greater marketing efforts for its present products or services. This includes effective marketing efforts which are as follow: enhancing the number of sales people, an increase in advertising expenditure, use extensive sales promotions.

Market development is a strategy where the business launches its existing products in the new markets or geographical areas. The organization does not introduce new or modified products, rather they offer the same products line in a new geographical area.

Product development and diversification is the strategy whereby the organization tries to improve its competitive position and sales through improvement and modification in its existing products.

The case study - Go-Jek Indonesia

Go-Jek Indonesia was an online motorcycle service managed by PT Go-Jek Indonesia and founded by Nadiem Makarin and Michael anglo Maron in 2011 (Leighton C, 2015). Its popularity and widespread usage was due to the traffic jams conditions in the big cities of Indonesia, especially Jakarta, the capital city. When the service started, it was not only to assist people who needed immediate transportation, but also the drivers who were often waiting for a long time for a customer.

Go-Jek call center operators were providing the service at the beginning. However, due to Technological Innovation, the system was transformed into a more efficient and effective one, whereby a Go-Jek's a smartphone application was developed. Within this App, customers could order the service online, at any time or place and drivers could pick up the order, provide the services and the customer can pay either by using credit based systems, like Go-Pay or by cash (Pratama H.A, 2016).

In the Go-Jek application, they are other services apart from transportation. Currently, it offers many services as table 1 illustrate below.

<table>
<thead>
<tr>
<th>Go-Jek services</th>
<th>Motorcycle ride</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go-Ride</td>
<td>Car ride</td>
</tr>
<tr>
<td>Go-Food</td>
<td>Food delivery</td>
</tr>
</tbody>
</table>

Table 1; Services offered by Go-Jek
<table>
<thead>
<tr>
<th>Go-Send</th>
<th>Delivery packages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go-Mart</td>
<td>Delivery groceries</td>
</tr>
<tr>
<td>Go-Box</td>
<td>Truck Services</td>
</tr>
<tr>
<td>Go-Massage</td>
<td>Massage services</td>
</tr>
<tr>
<td>Go-Clean</td>
<td>Cleaning services</td>
</tr>
<tr>
<td>Go-Glam</td>
<td>Woman skin care</td>
</tr>
<tr>
<td>Go-Tix</td>
<td>Ticket booking service</td>
</tr>
<tr>
<td>Go-Busway</td>
<td>Busway monitoring service</td>
</tr>
<tr>
<td>Go-Pay</td>
<td>Virtual wallet</td>
</tr>
</tbody>
</table>

Source: [https://www.go-jek.com/](https://www.go-jek.com/)

**Bandung, Indonesia**

Bandung is among the fast growing cities in ASEAN, being the third largest city in Indonesia after Jakarta and Surabaya and it has 0.91 percent of the Indonesian population. It is as busy as any other metropolitan cities and has a friendly business atmosphere to start and grow a venture. Figure 1 below, shows the data of Bandung city population. As shown in figure 1 below, population growth has increased reaching 2,575,323 people in 2018 report.

![Figure 1, Bandung Population](http://population.city/indonesia/bandung/)

Source: [http://population.city/indonesia/bandung/](http://population.city/indonesia/bandung/)

**Methodology**

The research design used here will provide the blue print that was used to build an overall strategy and therefore, addresses the research problem under discussion (Kombo & Tromp, 2009). The Quantitative approach was used in this study, which is descriptive in nature and the results obtained used for statistical procedure; whereby the knowledge discovered will use
numerical data as a means of analyzing the obtained information. Table 1 below, shows the characteristics of the methodology used in this paper.

Table 2: Characteristics of the Research Methodology

<table>
<thead>
<tr>
<th>No</th>
<th>Characteristics</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Based on method</td>
<td>Quantitative</td>
</tr>
<tr>
<td>2</td>
<td>Based on the Objectives</td>
<td>Conclusive</td>
</tr>
<tr>
<td>3</td>
<td>Based on the type of Investigation</td>
<td>Correlation</td>
</tr>
<tr>
<td>4</td>
<td>Based on analysis Unit</td>
<td>Individual</td>
</tr>
<tr>
<td>5</td>
<td>Based on the timing</td>
<td>Cross sectional</td>
</tr>
</tbody>
</table>

**Hypothesis**

In order to discuss the Technological Innovation strategies within Go-Jek Indonesia, two independent variables (Application Functionality and Usefulness of ride hailing service) will be tested against a dependent variable (Customer Satisfaction). After test results have been obtained, analysis will be conducted to prove if the strategies used in developing those products and services can bring competitive advantage to this company.

This study proposed the following 2 hypothesis for verification:

H1: there is correlation between the independent variable ‘Application Functionality’ and the dependent variable ‘Consumer Satisfaction’

H2: there is correlation between the independent variable ‘Usefulness of Go-Jek’ and the dependent variable ‘Consumer Satisfaction’

![Figure 2, Research Framework](image-url)
Source: Research Data 2018/2019

**Population and Sample Size**

The study was performed in Bandung, Indonesia, and data was obtained from its occupants. The formula used in obtaining the sample size:

\[ n = \frac{N}{1 + Ne^2} \]

- \( n \) = sample size
- \( N \) = Population size
- \( e \) = the error term at 95\% level of confidence

Total population Bandung (\( N \)) = 2,575,000

\[ n = \frac{2,575,000}{1 + \left(\frac{2,575,000 \times 0.05^2}{2} \right)} = 399.93787373 \approx 400 \]

**Analysis and discussion**

Validity and reliability of the Data collected

Validation test results as illustrated in Table 2, from the loading factor to each indicator latent variables derived from the output and value Average Variance Extracted (AVE). In any research that is confirmatory, the rule of thumb used to test validity is known as the value loading factor, which should be more than 0.7, while AVE value should be more than 0.5 (Latan, 2013).

Below is the formula that has been used to calculate each variable:

\[ \text{AVE} = \frac{\sum_{i=1}^{n} L_i^2}{n} \]

Whereby:

- “\( L_i \)” is a value loading factor.
- “\( n \)” a number of indicators in each variable.

**Construct Reliability (CR)**

For CR the Value loading factor which is greater than 0.7, indicates that the obtained results are reliable. (Hair et al, 2010).

Reliability test in this research used Construct Reliability (CR) to test the reliability of Construct and it has been calculated using the formula below:

\[ \text{CR} = \frac{\left(\sum_{i=1}^{n} L_i \right)^2}{\left(\sum_{i=1}^{n} L_i^2 \right)^2 + \left(\sum_{i=1}^{n} \theta_i \right)^2} \]

Whereby:

- “\( L_i \)” is the loading factor.
“ei” is Number of variance error in each indicator.
“n” is number of indicator in each variable.

The study results as shown in Table 2 below indicates that the value of AVE on each indicator has exceeded 0.5 and from the rule of the thumb when the AVE value is greater than 0.5, indicating that the indicators in each variable are valid.

Furthermore Table 2 indicates that CR value of each indicator has exceeds 0.7 as a rule of the thumb, when the CR value exceeds that then the indicators in each variable are reliable.

The overall conclusion in regards to the Table 2 shows that the measuring instrument used in this study was valid and reliable.

Table 3: Validity and Reliability test results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Indicator</th>
<th>T-Value</th>
<th>Std. Loading Factors</th>
<th>Error Variance</th>
<th>Construct Reliability</th>
<th>Avg. Variance Extracted</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application functionality</td>
<td>WF1</td>
<td>12.32</td>
<td>0.76</td>
<td>1.12</td>
<td></td>
<td></td>
<td>Valid and Reliable</td>
</tr>
<tr>
<td></td>
<td>WF2</td>
<td>16.77</td>
<td>0.90</td>
<td>0.67</td>
<td></td>
<td></td>
<td>Valid and Reliable</td>
</tr>
<tr>
<td></td>
<td>WF3</td>
<td>15.57</td>
<td>0.89</td>
<td>0.82</td>
<td>0.89</td>
<td>0.70</td>
<td>Valid and Reliable</td>
</tr>
<tr>
<td></td>
<td>W4</td>
<td>16.01</td>
<td>0.89</td>
<td>0.75</td>
<td></td>
<td></td>
<td>Valid and Reliable</td>
</tr>
<tr>
<td></td>
<td>WF5</td>
<td>16.24</td>
<td>0.94</td>
<td>0.81</td>
<td></td>
<td></td>
<td>Valid and Reliable</td>
</tr>
<tr>
<td>Usefulness of using Go-Jek services</td>
<td>UGS1</td>
<td>16.55</td>
<td>0.89</td>
<td>0.60</td>
<td></td>
<td></td>
<td>Valid and Reliable</td>
</tr>
<tr>
<td></td>
<td>UGS2</td>
<td>13.74</td>
<td>0.78</td>
<td>0.79</td>
<td></td>
<td></td>
<td>Valid and Reliable</td>
</tr>
<tr>
<td></td>
<td>UGS3</td>
<td>13.99</td>
<td>0.78</td>
<td>0.75</td>
<td></td>
<td>0.84</td>
<td>Valid and Reliable</td>
</tr>
<tr>
<td></td>
<td>UGS4</td>
<td>15.74</td>
<td>0.86</td>
<td>0.65</td>
<td></td>
<td></td>
<td>Valid and Reliable</td>
</tr>
<tr>
<td></td>
<td>UGS5</td>
<td>17.23</td>
<td>0.92</td>
<td>0.54</td>
<td></td>
<td></td>
<td>Valid and Reliable</td>
</tr>
</tbody>
</table>
### Consumer Satisfaction

<table>
<thead>
<tr>
<th></th>
<th>Valid and Reliable</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS1</td>
<td>11.98 0.64 0.81</td>
</tr>
<tr>
<td>CS2</td>
<td>17.14 0.84 0.51</td>
</tr>
<tr>
<td>CS3</td>
<td>16.69 0.86 0.57</td>
</tr>
<tr>
<td>CS4</td>
<td>17.71 0.81 0.42</td>
</tr>
<tr>
<td>CS5</td>
<td>19.67 0.95 0.38</td>
</tr>
</tbody>
</table>

Source: Research Data 2018/2019

#### Feasibility Model

The other test used was the Feasibility Model this was to ensure that Goodness of Fit (GoF) is an indication of the comparison between the models specified by the matrix covariance between indicators. If the GoF results are good, then the model can be accepted and vice versa. Overall, there are three types of Goodness of Fit that is: Absolute Fit Indices, Incremental Fit Indices and Parsimony Fit Indices (Latan, 2013). Table 3 shows the Goodness of Fit results.

Table 4; Goodness fit in structural equation
When assessing GoF results, the criteria cut-off values have been categorized as follows:

<table>
<thead>
<tr>
<th>Goodness of Fit Indices</th>
<th>Cut-Off Value</th>
<th>Result</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute Fit Indices</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\chi^2$ Significance Probability</td>
<td>$\geq 0.05$</td>
<td>$P = 0.00002$</td>
<td>Poor Fit</td>
</tr>
<tr>
<td>GFI</td>
<td>$\geq 0.90$</td>
<td>0.95</td>
<td>Good Fit</td>
</tr>
<tr>
<td>RMSEA</td>
<td>$\leq 0.08$</td>
<td>0.043</td>
<td>Good Fit</td>
</tr>
<tr>
<td>RMR</td>
<td>$\leq 0.08$</td>
<td>0.057</td>
<td>Good Fit</td>
</tr>
<tr>
<td>SRMR</td>
<td>$\leq 0.10$</td>
<td>0.041</td>
<td>Good Fit</td>
</tr>
<tr>
<td>Nor. Chi-Square ($\chi^2$/DF)</td>
<td>$&lt; 3$</td>
<td>1.737</td>
<td>Good Fit</td>
</tr>
<tr>
<td>Incremental Fit Indices</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NFI</td>
<td>$\geq 0.90$</td>
<td>0.96</td>
<td>Good Fit</td>
</tr>
<tr>
<td>TLI (NNFI)</td>
<td>$\geq 0.90$</td>
<td>0.98</td>
<td>Good Fit</td>
</tr>
<tr>
<td>CFI (RNI)</td>
<td>$\geq 0.90$</td>
<td>0.98</td>
<td>Good Fit</td>
</tr>
<tr>
<td>RFI</td>
<td>$\geq 0.90$</td>
<td>0.95</td>
<td>Good Fit</td>
</tr>
<tr>
<td>IFI</td>
<td>$\geq 0.90$</td>
<td>0.98</td>
<td>Good Fit</td>
</tr>
<tr>
<td>Parsimony Fit Indices</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGFI</td>
<td>$\geq 0.50$</td>
<td>0.93</td>
<td>Good Fit</td>
</tr>
<tr>
<td>PNFI</td>
<td>$\geq 0.50$</td>
<td>0.79</td>
<td>Good Fit</td>
</tr>
<tr>
<td>PGFI</td>
<td>$\geq 0.50$</td>
<td>0.69</td>
<td>Good Fit</td>
</tr>
</tbody>
</table>

Source: Data collected 2018/2019

When assessing GoF results, the criteria cut-off values have been categories as follows: Absolute Fit Index (AGFI), Parsimony Normed Fit Index (PNFI) and Parsimony Goodness of Fit Index (PGFI).

1. This value $\chi^2$ Significance Probability, $p = 0.0002$ shows that GoF is poor because it is below the cut off value $\geq 0.05$.
2. The GFI value in this study is 0.95, which means that the Suitability Model of this research is a good fit, since the cut off value is $\geq 0.90$.
3. Value RMSEA value in this study is 0043, which means compatibility model of this research is good fit, since the cut off value is $\leq 0.08$.
4. Value RMR value in this study is 0.057, which means the research model that has been used for this research is good fit, since the cut off value is $\leq 0.08$. 
5. Value SRMR in this study is 0.041, which means the research model fit is good fit since cut off value for SRMR is \( \leq 0.08 \).

6. Value Nor. Chi Square in this study is 1.737, which means that means the model is Good fit; the criteria for value Nor. Chi Square to qualify is when it is \(< 3 \).

7. Value NFI in this study is 0.96, which means the model to qualify good fit the value has to be \( \geq 0.90 \).

8. Value TLI (NNFI) in this study is 0.98, which means the model is good fit since the criteria to qualify require the NNFI value to be \( \geq 0.90 \).

9. Value CFI (RNI) in this study is 0.98, which means the research model is good fit since the cut off value of CFI (RNI) is \( \geq 0.90 \).

10. Value RFI in this study is 0.95, which means the research model fit is in a state of good fit since the cut off value of RFI in order to qualify good fit has to be \( \geq 0.90 \).

11. Value IFI in this study is 0.98, which means the research model is in a state of good fit since the cut of value of IFI in order to qualify good fit has to be \( \geq 0.90 \).

12. Value AGFI in this study is 0.93, which means the research model fit is in a state of good fit since the cut off value of AGFI in order to qualify good fit has to be \( \geq 0.50 \).

13. Value PNFI in this study is at 0.79, which means the research model fit is in a state good fit since the cut off value of PNFI in order to qualify good fit has to be \( \geq 0.50 \).

14. Value PGFI in this study was 0.69, which means the research model fit is in a state Good fit since the cut off value of PGFI in order to qualify good fit has to be \( \geq 0.50 \).

Hypothesis Testing

Hypothesis

1. Application Functionality

Ho: there is no correlation between the independent variable ‘Application Functionality’ and the dependent variable ‘Consumer Satisfaction’

Ha: there is correlation between the independent variable ‘Application Functionality’ and the dependent variable ‘Consumer Satisfaction’

2. Usefulness of Using Go-Jek Services

Ho: there is no correlation between the independent variable ‘Usefulness of Using Go-Jek Services’ and the dependent variable ‘Consumer Satisfaction’

Ha: there is correlation between the independent variable ‘Usefulness of Using Go-Jek Services’ and the dependent variable ‘Consumer Satisfaction’

Regression Result
\[ Y_i = \beta_1 X_{1i} + \beta_2 X_{2i} + e_i \]
\[ CS_i = \beta_1 WF_i + \beta_2 UGS_i + e_i \]

*Model Equation: \( CS_i = 0.12WF_i + 0.20UGS_i \), Errorvar = 0.070, \( R^2 = 0.093 \)

*Standarderror: (0.061)(0.062)(0.16)\)

\( T - \text{values}: 2.023, 3.059, 96 \)

**Table 4: Criteria**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>(-\frac{t_1}{2^\alpha} \leq t \leq \frac{t_1}{2^\alpha})</td>
<td>Failed to reject Ho</td>
</tr>
<tr>
<td>( t &gt; \frac{t_1}{2^\alpha} )</td>
<td>Ho rejected</td>
</tr>
<tr>
<td>( t &lt; -\frac{t_1}{2^\alpha} )</td>
<td>Ho rejected</td>
</tr>
</tbody>
</table>

**Result**

Signicances level: 5%

\[-\frac{t_1}{2^\alpha} = -1.96\]

\[ t_1 = 1.96 \]

**Table 5: Results from the linear regression**

<table>
<thead>
<tr>
<th>Variable</th>
<th>( T)-value</th>
<th>Result</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application functionality</td>
<td>2.02</td>
<td>2.02 &gt; 1.96</td>
<td>Ho rejected</td>
</tr>
<tr>
<td>Usefulness of using Go-Jek services</td>
<td>3.30</td>
<td>3.30 &gt; 1.96</td>
<td>Ho rejected</td>
</tr>
</tbody>
</table>

There is correlation between the independent variable ‘Application Functionality’ and the dependent variable ‘Consumer Satisfaction’

There is correlation between the independent variable ‘Usefulness of Using Go-Jek Services’ and the dependent variable ‘Consumer Satisfaction’
Based on the results obtained the Reliability and Validity test has confirmed that there is strongly correlation between the variables used in this research. This correlation is between the dependent variable (Customer satisfaction) and the independent variable (Application functionality and usefulness of ride hailing).

Through the use of the Feasibility Model which was used to test the Good or Fit it has been shown that there is a good fit. Thus the model used to test the Independent variable (Application functionality and usefulness of the ride hailing) against Dependent variable (customer satisfaction) confirmed a good fit.

Also the linear regression equation has been used to find out the relationship that existing between the data obtained in this research study.

Meanwhile the linear regression results show that Null Hypothesis(Ho) factors have not collated, but it has given the opportunity for Alternative Hypothesis (Ha) factors by accepting that there is correlation of the research data. This means the usefulness of ride hailing services and application functionality plays a big role for customer satisfaction.

**Discussion of strategies**

**Competitive strategies**

Competitive strategies are the means by which a company can enhance both its products and services in order to ensure and enhance quality. This can then provide an edge over other players in their industry (Nagle, Hogan and Zale, 2016). A Competitive strategy is developed from the following three strategies which are: product differentiation, cost leadership and focus strategies.

**Cost leadership**

Cost leadership refers to the ability and capacity of a company to price its products and services in such a way that its competitors cannot compete effectively at the same price or go any lower without impacting the companies’ viability. According to this strategy, the most competitive firms are those which have the lowest costs. These firms’ competitive advantage is depending on their ability to minimize costs (Khayati et al, 2014). Companies can do this effectively by incorporating non-monetary rewards and punitive measures into their pricing such as promotions, transparent fares, and quick availability of services, etc. From this study both Table 1 and 2 show proof of reliability and validity, together with a good fit, to support the result of showing how the use of Technological Innovation strategies can create competitive advantage in the area of cost leadership, Go-Jek Indonesia has differentiated themselves from other providers. This conclusion supports research hypothesis no 2.
Product Differentiation
Product differentiation is a marketing strategy whereby businesses attempt to make their product unique so as to stand out from their competitors. The business focus should be to ensure industrial positioning on the one hand and market positioning of the other hand (Khayati et al, 2014). This includes developing features, physical attributes or substantive differences exist between a product and other alternatives. In the case of this study, Go-Jek has managed to create its uniqueness by offering products and services which has differentiated it from the other competitors. For example, their App is very simple and friendly to use, it has been designed professional and it is fast to load. Also it uses language that is understood by most of its customers, cashless payment and availability of many other products and services (which made it a platform). This conclusion support research hypothesis no 1.

Focus strategy
This third strategy is a mix of cost leadership and product differentiation of particular market segments, which are defined as a group of consumers or products. This is the strategy where the company concentrates its resources on entering or expanding into a narrow market or industry segment. The organization can make use either or both simultaneously by targeting a group of buyers (Khayati et al, 2014). In this study, the focus strategy has utilized both strategies to support the convenient and affordable transport service in a faster and easy way. This has enable Go-Jek to create a new market segment by providing enhanced products and services to satisfy growing customer needs.

How Go-Jek has created a Blue Ocean for its ride-hailing service?

Ride-hailing services are becoming much more popular as the use of mobile technology rapidly increases. Ride hailing services providers have understood specific customer pain points that existed in the taxi industry. Go-Jek formulated a strategy that removes these blocks and so creates new value, for the company and their user base.

What are the pain points that buyers encounter from the taxi industry?

The Buyer Utility Map created by Chan Kim and Renée Mauborgne’s and the Table 6 below illustrates the Buyer Utility Map for ride hailing service sector. This shows that customers can enjoy the benefits of using the ride hailing services, because they are simple to order and easy to pay for. Some unique aspects of car rental services in this sector are that they can be fun and create good feelings for the customer. Tracking features within the provided service reduces risks for the customer.
Table 6, The Buyer Utility Map

<table>
<thead>
<tr>
<th></th>
<th>Order</th>
<th>Ride</th>
<th>Pay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Productivity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simplicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Convenience</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fun &amp; Image</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How Buyer Utility create Value Innovation?

The primary concept that Go-Jek Indonesia has done to create Value Innovation in its business area is by lowering the cost structure and creating buyer utility in the transportation sector. The current options in the transportation market comprise mainly of public transport and taxis. While public transport and taxis are regulated by the city, this limits the supply and determines the fare structure. In accordance with the Six Paths of the Blue Ocean Strategy framework, Go-Jek recognized that rising lifestyle trends offers an opportunity for car owners to generate more income and in the case of unemployed people an opportunity to earn an income.

Kim and Mauborgne's Four Actions Framework can be applied to Go-Jek to demonstrate how it challenges an industry’s strategic. The Frameworks is referred to as the ERRC Grid. The components of the ERRC grid are: Eliminate, Reduce, Raise, Create

Eliminate

Go-Jek eliminated price negotiation and metered fares by using a donation-based smartphone model. This was regarded as one of the major pain points users of taxis experienced, along with the problem of some taxi drivers refusing cashless payment, which has left the impression that drivers were deceiving customers in an effort to charge higher fares. This strategy also reduces the cost of installing metering hardware and software into each car. Go-Jek has been able to offer consistent and predetermined fares before customers order the service. This has empowered customers to obtain a fair market price that they are comfortable to pay for.

Reduce

Go-Jek reduced contradiction in service provision by hiring skilled drivers and introducing training programs to ensure safe driving practices. This goes hand in hand to help capture
private citizen drivers who want to make extra income with their own cars. This tactic has lowered costs of employing full-time drivers, car fleet maintenance and buying medallions from the city. It also reduced uncertainty in customer waiting times by showing the real-time location of nearby Go-Jek driver available to provide the service.

**Raise**
Go-Jek increased rider security, by introducing a system that has driver identification and vehicle traceability. With this App the entire journey can be tracked, which has made Go-Jek rides safer and more secure than other available transport option. Also, Go-Jek has insured its customers in case of an accident, by taking on responsibility of any injured person. This has managed to create brand loyalty. Furthermore, Go-Jek also increased buyer price transparency.

**Create**
Go-Jek uses its mobile platform to create options for non-cash payments something not initial offered by taxi services. It also offers promotions and other awards to both drivers and users. Together, these create trust and enable both drivers and riders to make decisions about offering and accepting customer requests. Drivers also get access to health and accident cover, financial services and insurance – services not available to other taxi drivers.

![Figure 3: Go-Jek’s Eliminate-Reduce-Raise-Create (ERRC) Grid](image-url)
Figure 4, Go-Jek Canvas Model

Source: Research Data 2018/2019

The value curves for Go-Jek and taxis do not move together or converge. This means that Go-Jek is not a direct rival with taxis. The Canvas Model illustrates that Go-Jek focuses on offering simplified transactions using smartphone technology, so creating a community of loyal customers.

The value curve shape indicates Go-Jek acts upon the factors listed in the ERRC grid to differentiate from the existing market and create a Blue Ocean. The lack of a zig-zag shape in the value curve signals that Go-Jek has a focused and clear strategy. Go-Jek has managed to convert non-customers into real customers, which is to say that it has managed to engage with all three customer types. The first-tier non-customers are people who use taxis occasionally but are not happy with the experience or the prices and seek a better alternative. The second-tier non-customers are those who never use taxis because they are too expensive or they have other reasons, perhaps they perceive walking and public transportation as suitable alternatives. The third tier is non-customers; they are financially conservative and price conscious.

Go-Jek has been able to capture customers in the first and second tiers by offering lower prices, friendly drivers, the ability to give feedback easily and rides that are more convenient than public transport. In regards to the third tier, Go-Jek to convert some of this, into customers by offering Value for Money ride services.

Conclusion

This research study wanted to help readers to understand the importance of Technological Innovation in the ride hailing services sector and how it has helped customers in terms of the
transportation challenges they encounter, as well as providing the company with a competitive advantage.

According to the theory of Technological Innovation that has being applied in this study, the results have shown that the impact of technology on the new product offerings in the ride hailing sector has brought more transportation options which has resulted in greater customer satisfaction. Customers can now use their fingers and smartphones to obtain a growing range of services. Another positive outcome has been a reduction of traffic jams in parts of major cities and at various times.

The TI theory has emphasized to all companies not only the ride hailing services they should stop overly concentrating on developing strategies just for the current competitive market (the Red Ocean), rather companies needs to use technology which is regarded as one of the best tools to enhancing current business practices as a means of differentiating themselves within the current market and expand into new market segments. Companies are also advised not to use one strategy but a mix of strategies.

The Blue Ocean Strategy is a proven strategy which Go-Jek has utilized to fulfill customer needs in the ride hailing services sector. However there are many hurdles being encountered which need to be addressed, such as the government regulations and laws, unfair practices of other competitors and the rapid pace of change within the industry.

While performing this study the researcher was not able to obtain fully details of the strategies used by Go-Jek. The methods used were user questionnaires, direct observations and secondary information sources such as online publications and relevant articles. The researcher conducted various test methodologies which confirm the validity, reliability and Good to Fit of the data.

Recommendation

This strategy so far has worked very well for Go-Jek and this provides an opportunity for competitors to adjust and modify their own strategies and their service offerings to better compete in the market place.

Because of rapid changes within technology, social trends and customer expectations, further research should be conducted by these companies to get a better understand on how to use technological advancements in creating more services so increasing customer demand.

Furthermore, companies that follow this strategy should ripe greater profit and great market share. The growth of these successful companies with their large profit will hopefully allow them to contribute to other broader areas. For example, addressing environmental issues and providing societal benefits such as greater employment opportunities.
Policy makers and regulators also need to be actively involved by looking at the current rules, regulations and laws which are in place and ensuring that they are applicable to the evolving industry. If they are not, look at changes that do not hinder business efforts.

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