BUSINESS MODEL GENERATION AND LEAN STARTUP METHOD AS THE BASIS FOR BUSINESS DEVELOPMENT FEASIBILITY STUDY, CASE STUDY OF PO. GAJAH MUNKGUR SEJAHTERA

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ABSTRACT

The rapid growth of Indonesia population has caused the increasing demand in transportation service. It is known that 90% of Indonesian population is utilizing land transports, and one of them is bus. It is also known that the competition of bus companies in Indonesia is getting intense and has resulted in many companies to close their business because of no longer capable of racing the competition. PO Gajah Mungkur Sejahtera is the land transport service company of AKAP (Antar Kota Antar Propinsi - Inter-City, Inter-Provience) Bus which struggle to survive and win the business competition. This research is focusing on a business development feasibility in form of tourism bus using Lean Startup and Business Model Generation. Based on the research result, the value proposition is the flexible tourism bus facility or based on request. Next, the business model is mapped into 9 blocks and business feasibility study was conducted based on the business model, which was reviewed from the market aspect, marketing aspect, technological and operational aspect, resources management and partner aspect, and financial aspect. From the result of feasibility study, it can be known whether or not the tourism bus business is feasible to do. Keywords: Lean Startup, Experiment Board, Business Model Canvas, Feasibility Study

1. INTRODUCTION

1.1 Background

PO Gajah Mungkur Sejahtera is land transport service company of inter-City, Inter-Provience Bus (AKAP). The tight business competition has driven PO Gajah Mungkur Sejahtera to establish a business strategy in order to win the competition among the competitors. Currently, the number of bus company is decreasing and there had been 13 bus companies which were closed during the last two years. There is a decrease in the number of bus passenger for 60 percent for Jakarta destination (Pasek, 2013). The continuous decrease in the number of passengers has resulted in many bus company which operates around 1,100 buses were at the edge of bankruptcy (Sirait, 2013).

In the business, a company can compete as defender by defending the business and investing for new business (Luecke, 2003). PO Gajah Mungkur Sejahtera created new investment in form of tourism bus. Tourism bus is considered the right business because the growth of tourist using the tourism bus evey year continues to grow, moreover during the certain holidays (Dharmoyuwono, 2013). As an effort to realize the tourism bus business for the business expansion of PO Gajah Mungkur Sejahtera, the lean startup model was used by creating business model using several tools including questionnaire, empathy map, validation board, and business model canvas. Then, a feasibility study was conducted to the business model.

1.2 Research Purpose

The purpose of the research is as follows:
1. To identify the value proposition expected from the tourism bus
2. To design the business model using the lean startup model for PO Gajah Mungkur Sejahtera
3. To establish a feasibility study for the tourism bus business for PO Gajah Mungkur Sejahtera based on the business model

2. THEORETICAL BACKGROUND

2.1 Lean Startup

The basis of lean startup is derived from the manufacture company which aims to reduce
Lean Startup and Business Model Generation
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waste in the production process (Ries, 2011). Lean Startup in the business improves the frequency of contact with the customer so that the testing can be done and avoid incorrect market assumption as early as possible. The definition of lean startup concept is a method to minimize the risk in establishing business, especially by relying on the iteration of product to market to obtain quality feedback as fast as possible and as frequent as possible form the market (Ries, 2011).

2.2 Empathy Map
Empathy map is a tool in form of direct interview with several respondents. After interview with the customer/respondent using empathy map, it is clear what the customer want specifically and directed according to the direction of empathy map. According to Osterwalder (2010), there are 4 aspects in the empathy map:
1. Say (What the customers are complaining about)
2. Think (What the customers are thinking about)
3. Feel (What the customers are worrying about)
4. Do (What the customers are doing)

2.3 Experiment Board
Experiment Board is a tool used to measure the validity of a measurement to a research or survey based on assumption. Experiment Board is useful to support the Business Model Canvas to translate the customers need or customers problem. Experiment Board aims to validate the customers need. After validation, MVP or Minimum Viable Product will be obtained.

2.4 Business Model Canvas
Business Model Canvas is a logical picture business model on how the organization creates, delivers and captures a value (Osterwalder, 2010). The nine building blocks includes:
- Customer Segments: Customer Segment Block which describes a group of people or organization to be reached or served by the company.
- Value Propositions: Value Proposition Block describes the combination between product and service which creates value for the specific customer segment.
- Channels: Channel Block describes how a company communicates with the customer segment and reaches them to provide Value Proposition.
- Customer Relationships: Customer Relationship Block describes various types of relationship established by the company and the specific customer segment.
- Revenue Stream: Revenue Stream Block describes the cash produced by the company from each Customer Segment (cost should deduct the income to produce revenue)
- Key Resources: Key Resources Block describes important aspects required by a business model to be fully functional.
- Key Activities: Key Activities Block describes important things to do by the company in order that the business model can work perfectly.
- Key Partnerships: Key Partnerships Block describes the network of supplier and partner which allows the business model to work.
- Cost Structure: Cost Structure Block describes all costs spent to operate the business model.

2.5 Feasibility Study
Business Feasibility Study is an activity which studies comprehensively an activity or business to be launched, or in order to determine the feasibility of the business (Kasmir and Jakfar, 2003). The business feasibility study can be reviewed from the market aspect, marketing aspect, technological and operational aspect, resources management and partner aspect, and financial aspect (Sunyoto, 2014).

3. RESEARCH METHOD
The research method is a structured and systematic thinking process. Research methodology is very important aspect in a research so that it can be directed to reach the objectives. In the data processing stage, there are distribution of questionnaire, interview (empathy map), creation of experiment board, business canvas model, and feasibility study.
3.1 Questionnaire Distribution
Questionnaire distribution is divided into two stages: the preliminary questionnaire and research questionnaire. Preliminary questionnaire aims to find out the attributes at the interest level of the tourism bus and to obtain other propositions given by the respondents for inclusion into the research questionnaire. Research questionnaire is divided into two: the customers characteristics questionnaire and interest level of tourism bus questionnaire.

3.2 Interview (Empathy Map)
Interview was conducted to 20 respondents who utilized tourism bus service in Jakarta, Depok, Tanggerang and Bekasi (JADETABEK) area. The interview result was converted into empathy map. There was no provision regarding the number of respondents for the empathy map. If the interview result to a number of respondents have already create the stable pattern of answer, then further interview is no longer necessary (Osterwalder, 2010).

3.3 Experiment Board
Experiment board was made to validate the problem statement. On experiment board, an output was created in form of Minimum Viable Product (MVP). MVP is a product concept with minimum feature to be launched to the market for market test purpose (Ries, 2011).

3.4 Business Model Canvas (BMC)
BMC has 9 building blocks as follows: customer segments, value propositions, channels, customer relationships, revenue streams, key resources, key activities, key partnerships, and cost structure (Osterwalder, 2010).

3.5 Feasibility Study
Furthermore, business feasibility study was conducted based on the business model canvas, which was reviewed from the market aspect, marketing aspect, technological and operational aspect, resources management and partner aspect, and financial aspect (Sunyoto, 2014). From the result of feasibility study, it can be known whether or not the tourism bus business is feasible to do.

4. RESULT AND DISCUSSION
4.1 Questionnaire
4.1.1 Tourism Bus Attribute
Preliminary questionnaire contains the statement to find out the interest level of tourism bus attribute and it was expected that the respondents could provide attribute of additional interest factors which is not included in the given questionnaire. The followings are the interest level attributes of the tourism bus from the consumers perception.

1. The tourism bus service which is equipped with good facilities (audio, tv, seat, curtain)
2. Tourism bus service with toilet facility
3. Tourism bus service with smoking area facility
4. Tourism bus service with the facility of refrigerator to store food and beverages.
5. Tourism bus service which is equipped with glass breaker, portable extinguisher and first aid box.
6. Tourism bus service which is equipped with seat belt on each passenger seat
7. Tourism bus service which has robust roof so that it does not leak during the rain
8. Tourism bus service which is neat and clean
9. Tourism bus service which has clean and polite look
10. Tourism bus service which is beautiful and interesting
11. Tourism bus service which provides the bus with the service life of less than 5 years
12. Tourism bus service which has trained crews
13. Tourism bus service which is always ready for the specified schedule
14. Tourism bus service which offers interesting tour packages
15. Tourism bus service which offers the price comparable to the gained values
16. Tourism bus service which has easy booking process
17. Tourism bus service which has call center and easiness in information inquiry
18. Tourism bus service which has famous brand
19. Tourism bus service which offers facility for location tracking information
20. Tourism bus service which provides accident insurance
21. Tourism bus service which provides compliment to the passenger
22. Tourism bus service which provides personal care to the passenger

Interest level attribute of the tourism bus is based on the Service Quality. If seen from the Service Quality, most of the respondents consider the reliability aspect with the score of 3.8 and tangibles with the score of 3.53. Both aspect includes the reliability of the workers and physical facility of the equipment, employee and the communication infrastructures.

4.1.2 Characteristics of the Tourism Bus Users

From the questionnaire result, the characteristics of the tourism bus user can be concluded as follows:

- 51% tourism bus users are students and 45% are employees
- 70% customers were between 20-30 years old and 15% customers were between 30-40 years old.
- 43% customers have the average spending for meal outside the house of IDR 500,000 – IDR 1,000,000 per month.
- The frequency of tourism bus usage depends on the interest of each customer, however 59% respondents use tourism bus service < 1 in a year.
- 39% customers spent IDR 2,000,000 – IDR 3,000,000 each time they book the tourism bus service.
- The bus facility influence 38% customers in terms of booking, safety influences 27% customers, and the price influence 20% of their customers.
- 72% customers book via telephone to the tourism bus company.
- 43% users of the tourism bus service usually use the bus with the institution.
- The city of tourism destination for the tourism services users are varied and different such as 25% choose Malang, 16% Danau Toba, 14% Pangandaran, 12% Bukit Tinggi, 7% Semarang, and 26% choose other destinations.

4.2 Empathy Map

Form the empathy map, it can be seen on the "say" aspect that the users of tourism bus service said that good criteria of tourism bus is cool AC, comfortable seat, TV, clean, and non-reckless driver. Sometimes, some facilities are not used and it depends on the travel distance with the tourism bus. It can be seen that the respondents are tend to talk about the bus physics and facilities.

On the "do" aspect, it can be seen that most the activities of the tourism bus users during the travel are sleeping, watching TV, talking and eating. Whereas, the booking is done via telephone. From this aspect, it can be found that each customer does different activities.

On the "think" aspect, it can be concluded that the users tend to choose newer bus than older one because they think that newer bus has better facilities and machine and well-maintained than the old one. The users also think that the TV facility can provide entertainment during their travel. Additionally, the user also thinks that the reckless driver can endanger the passenger. Common thinking of the customers tends to be related with bus physics and facilities during the travel.

On the "feel" aspect, it can be concluded that the passenger feels annoyed and worried when the driver is speeding and reckless while driving the tourism bus. Additionally, the tourism bus users are also disappointed when the bus does not meet the expectation during the booking time,
such as the facilities that do not meet the expectation.

From the above four aspects, it can be known that the customers require proper tourism bus facilities and physics because they provide comfort to the customers where each customer has different comfort level due to different activities. Based on the above empathy map, the following problem statement is found.

From the conclusion of the above empathy map, a problem statement was:
- **Stakeholder**: Age between 20 – 40 years old, neatly dress, works as travel agent, employee or students, communicative and friendly.
- **Problem**: They require tourism bus according to the stakeholders requirements in terms of facilities and physics.
- **It is because the requirements of each stakeholder are different.**

### 4.3 Experiment Board

Experiment board was made to find out whether or not the resulting problem statement from the previous process is valid.

#### 4.3.1 Minimum Viable Product (MVP)

MVP for tourism bus business of PO Gajah Mungkur Sejahtera is the facilities according to the requirements of each customer, where they are different or in other words, the facilities should be flexible.

Certain facilities can be ordered as optional for the tourism bus with additional cost. The facilities are as follows:
- Pillow
- Blanket
- Food
- Bus attendant
- Selection of driver (male/female)
- Music and karaoke play list
- Movie to be played
- Banner for the tourist group on the tourism bus
- AC temperature
- Room Fragrance / aroma therapy
- Sleep mask

### 4.4 Business Model Canvas and Feasibility Study of the Business Model

Figure 3. describe the business model canvas based on the Lean startup method applied. Moreover, the information for business model canvas development also from interview, questionnaire, empathy map and validation board.
4.5 Feasibility Study

4.5.1 Market Aspect

- Customer Segment
  a. Market Segmentation
  Customer of tourism bus between 20-30 years old who work as employees or students. Whereas, those between 30-40 years old work as employees. Generally, the users of tourism bus come from middle and upper class. 54% customers book the tourism bus service directly or without middleman. The customers who book directly are travel agent, institution and community, and those who do not book directly are family on vacation and traveler. From the booking activity, the customers can be divided into two category: the primary customer and secondary customer. Primary is the main target market, which is travel agent, institution and community. Whereas, secondary is the not the main target market, which is family on vacation and traveler.
  b. Targeting
  Main target market for the tourism bus business is primary customer of travel agent, institution and community. These customers can be the main target because the frequent use of tourism bus and the customers book directly.
  c. Positioning
  Positioning is the activity to design the company product image, so that the market segment appreciates and gives added value to the company. The characteristics if service to be highlighted and can be seen from the Business Model Canvas were flexible facilities which can be ordered based on the customer request.
  d. Differentiation
  The Value to be offered was the flexibility from various facilities.
  From the segmentation, targeting, positioning, and differentiation conducted to study the market aspects, it was found that PO Gajah Mungkur Sejahtera has the great opportunity seen from the business market target growth which is travel agent, institution and community. The growth was indicated by the number of travel agent in Indonesia which continues to increase every year (Hasan, 2014). The number of community for PO Gajah Mungkur Sejahtera is relatively large. Currently, the number of GM Mania on the facebook account is 10,843 people. Brand community is very important to optimize a product or service brand which directly affects the sales (Dewobroto, 2014).

4.5.2 Marketing Aspect

- Channel
  Channel used in this business includes travel agency, website and office. Channel is the bridge for the company to give value propositions to the customers. Travel agency is the important channel because many people use tourism bus service via travel agency. It can be seen from the number of travel agency which grows every year (Hasan, 2014). From the interview, respondents expected the availability of booking service via website because it facilitates the customers to obtain
information regarding the company and tourism bus, moreover the booking via website can be practical. Whereas, from the office, the customer can directly contact the company staff to obtain information and book the tourism bus service. Based on the research questionnaire result, 72% customers book via telephone and 27% comes to the company. From the interview, the customer demand the channel which facilitates the customers in booking activity. Travel agency, website, and office are the right channel and facilitate the customer for communication.

**Customer Relationship**
Customer relationship was done by means of CRM, community, and tour packages. CRM appears as the strategic bridge between information technology and marketing strategy. The company collects and analyzes the customer pattern data, interprets the customers behavior, establishes prediction model, responds to the customer communication in timely manner and effectively, and delivers the value and service to the individual customer. Additionally, the customer relationship was also applied using interesting promotion and established community. PO Gajah Mungkur Sejahtera has a community called GM Mania which has been loyal customer of PO Gajah Mungkur Sejahtera. The tour packages can facilitate the customer in planning the travel.

Based on the questionnaire result regarding the interest level of tourism bus, 60.8% customers are interested to the promotion in form of tour packaged offered by the company. Customer relationship was also conducted via CRM so that the company can have good relation and know the customer better, as well as the community. Activity in the community improves the intimacy of relationship between the community and the members and positively affects the company (Jang et al, 2008; Fuller et al, 2007). Consumer commitment to the community will also increase the quality of consumer relationship to a brand (Algesheimer et al, 2005).

### 4.5.3 Technological and Operational Aspects

**Key Activities**
*Key Activities* of the business includes the followings:
1. Booking Service
2. Onboard Service
3. Marketing
4. Research & Development (R&D)
5. Bus Maintenance

Seen from the technological and operational aspect, business activities includes the important activities for the business process. Based on the questionnaire of the interest level of tourism bus, 70.6% customers demand the easy and fast booking service, 84.2% customers demand reliable driver and crews, and 75.2% customers demand timely service during the travel. It shows that the booking service and on board service is required in the key activities. It shows that maintenance activity of the bus is required for the sustainability of the company.

### 4.5.4 Key Resources and Key Partners Aspects

**Key Resources**
*Key Resources* for the tourism bus business in PO Gajah Mungkur Sejahtera are as follows:
1. Tourism Bus
2. Standard and flexible facilities
3. Human Resources includes all workers and employees of involved in the tourism bus business in PO Gajah Mungkur Sejahtera.

Based on the technological and operational aspect explained above, key resources have already sufficient for the company business.

**Key Partners**
*Key Partner* for the tourism bus business in PO Gajah Mungkur Sejahtera are as follows:
1. Travel Agency: It is the bridge between the tourism bus service users and PO Gajah Mungkur Sejahtera. *Travel agency* plays important role because most of the users of the tourism bus service uses *travel agency*.
2. GM Travel: GM Travel or Gajah Mungkur Travel is the subsidiary of the PO Gajah Mungkur Sejahtera. GM Travel is a *travel agency* owned by PO Gajah Mungkur Sejahtera.
3. Restaurant & catering: PO Gajah Mungkur Sejahtera has a restaurant named Samikuring Resto. Samikuring Resto functions as one of the support of flexible facility which is the food ordered by the customers. 

Travel agency, GM travel, and restaurant & catering are the key partners which support the company activities for the operation of tourism bus business.

4.5.5 Financial Aspect

- Cost Structure

The summary of budget plan of tourism bus of PO Gajah Mungkur Sejahtera is as follows:

<table>
<thead>
<tr>
<th>Budget Plan Recapitulation</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buses + Working capital</td>
<td>Rp. 6,777,000,000</td>
</tr>
<tr>
<td>Place + Renovation</td>
<td>Rp. 390,000,000</td>
</tr>
<tr>
<td>Office Supply</td>
<td>Rp. 85,260,000</td>
</tr>
<tr>
<td>Vehicles</td>
<td>Rp. 492,000,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td>Rp. 7,744,260,000</td>
</tr>
</tbody>
</table>

Based on the Table 1., the budget plan can be explained in detail as follows. Investment on bus, including tourism bus, bus tax and title transfer fee. Working capital includes short term asset, which is cash and supply. Investment can also be placed for building lease and renovation required for the sustainability of the company. Investment for office supply includes Air Conditioner 1.5 PK, administrative desks, administrative chairs, computer, waiting room desk, waiting room chairs, couch, printer, whiteboard, information board, wall clock, TV, beverages showcase, water drum, garbage can, carpet, tissue, and soap. Whereas, investment for operational vehicle includes car and motorcycle.

- Revenue Stream

NPV (Net Present Value)

\[
NPV = \sum (free\ cash\ flow\ to\ firm \ast discount\ factor) - Total\ Investment
\]

\[
= (9,966,671\ast0.901) + (330,558,341\ast0.812) + (1,706,525,012\ast0.731) + (5,356,700,012\ast0.659) - (Investment – Bank Loan)
\]

\[
= (8,979,970 + 268,413,373 + 1,247,469,784 + 3,530,065,308) - (7,744,260,000 - 3,000,000,000)
\]

\[
= 5,054,928,435 - 4,744,260,000
\]

\[
= IDR 310,668,435.
\]

Because the NPV is positive, the investment for tourism bus of PO Gajah Mungkur Sejahtera is acceptable.

IRR (Internal Rate of Return)

\[
IRR = P1 – C1 \times \frac{P2 – P1}{C2 – C1}
\]

Where:
P1 = Interest rate 1
P2 = Interest rate 2
C1 = NPV 1
C2 = NPV 2

IRR = 11% – 5,341,076,882.12 \ast 13% – 11%

4,890,733,131.52 – 5,341,076,882.12

IRR value resulted from the calculation is 24%

PI (Profitability Index)

Calculation of profitability index for PO Gajah Mungkur Sejahtera is:

Cash inflow = IDR 16,410,625,048

The value is derived from:

( Cash inflow – tax – interest ) \ast Discount factor

The value is derived from:

Investment value = IDR 4,744,260,000

The value is derived from:

( Investment outlay + ± working capital ) \ast Discount factor

Profitability Index Result

\[
= IDR 16,410,625,048 / IDR 4,744,260,000
\]

= 3.459

With the profitability index = 3.459 and based on the PI > 1; the investment of tourism bus business of PO Gajah Mungkur Sejahtera is feasible.
PP (Payback Period)
Payback Period shows the time (in several years) an investment will be returned. Payback Period is calculated using the general formula as follows:

\[ \text{Payback Period} = n + \frac{a-b}{c-b} \times 1 \text{tahun} \]

Where:
- \( n \) = Last year where the amount if cash flow still cannot cover the initial investment.
- \( a \) = Amount of initial investment.
- \( b \) = Cumulative amount of cash flow in year \( n \).
- \( c \) = Cumulative amount of cash flow in year \( n+1 \).

\[ \text{Payback Period} = 4 + \frac{4,744,260,000 - 1,706,525,012}{5,356,700,012 - 1,706,525,012} \times 1 \text{year} = 4.83 \approx 4 \text{ Years 11 Months} \]

Investment will be returned within the period of no more than 5 years or exact number is 4 years 11 months. From the calculation of NPV, IRR, PI and PP, it can be proved and stated that the tourism bus business of PO Gajah Mungkur Sejahtera is feasible to do.

5. CONCLUSION

From the research result on PO Gajah Mungkur Sejahtera, we can draw conclusions as follows:

1. The users of tourism bus service demand physical facilities according to their requirements because they are different. Therefore, value proposition of tourism bus PO Gajah Mungkur Sejahtera is the flexible facilities and can be suited to the customers requirements.
2. Business Model Canvas established for PO Gajah Mungkur Sejahtera is as follows:
   - Value Propotion : Flexible facilities can be ordered according to the customers requirements.
   - Channel : Travel agency, website, and office.
   - Customer Relationships : Promotions in form of tour package, community, CRM software.
   - Key Activity : Booking service, on board service, marketing, maintenance of tourism bus, and R&D.
   - Key Resources: tourism bus, facilities and human resources (driver, crews and staff)
   - Key Partners : Travel agency, GM Travel, and restaurant & catering.
   - Cost Structure : Maintenance of tourism bus, flexible facilities of tourism bus, website, employee wage, operating costs.
   - Revenue Stream : Charter of tourism bus, order for flexible facilities of tourism bus, and order for tour package.

3. Based on feasibility analysis, total investment required to establish the tourism bus business is IDR 7,744,260,000., and will result in the IRR value of 24%, NPV of IDR 310,668,435., PI of 3.459, and PP for 4 years 11 months. Therefore, the tourism bus business of PO Gajah Mungkur Sejahtera is feasible to do.

5.1 Further Research

Lean Startup Method allows the business planner / entrepreneur to identify the Value Proposition which is the primary factor in the business. Therefore, in making business plan, high level of validity of the business can be obtained so that the risk of failure of implementation can be minimized. Further research should be done using other method such as Lean Canvas or Lean Design Thinking to obtain better result of the feasibility study,

6. REFERENCES

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